ANGLIA POLYTECHNIC UNIVERSITY

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MUSIC THERAPY WITH CHILDREN ON THE AUTISTIC SPECTRUM
APPROACHES DERIVED FROM CLINICAL PRACTICE AND RESEARCH

A Thesis in partial fulfilment of the requirements of Anglia Polytechnic University for the degree of Doctor of Philosophy

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Abstract

This thesis focuses on two specific clinical areas: music therapy with pre-school children with autistic spectrum disorder and their parents, and music therapy diagnostic assessments with children between the ages of four and twelve who are suspected of being on the autistic spectrum.

Firstly, the literature was examined and the clinical work was described in detail. This process made it possible to determine what characterises the author's particular approach, and to find out how it may be different to other music therapists' work. A 45 minute video which illustrates the approach with pre-school children with autism and their parents accompanies this thesis.

Two outcome research investigations were carried out. The first involved studying ten pre-school children with autistic spectrum disorder and their parents who received weekly, individual music therapy sessions over a period of 18 to 26 weeks each. The sessions were video-taped and the videos analysed in detail. The parents were interviewed and asked to fill in questionnaires both pre- and post-treatment. Nine out of the ten dyads achieved some or all of the individual aims set out before treatment began. The parents all felt that music therapy had been effective. The author also looked at how she spent her time in music therapy sessions across the ten children and found that she was generally very active and spent a high proportion of her time vocalising.

The second investigation compared Music Therapy Diagnostic Assessments (MTDA) with Autistic Diagnostic Observation Schedules (ADOS) carried out on 30 children suspected of being on the autistic spectrum. A scoring system similar to that used for the ADOS was devised for the MTDA especially for this research investigation. In addition, the children were interviewed after both the MTDA and the ADOS and the people carrying out the tests filled in a questionnaire about their perceptions of the assessment tool after every test. The two assessments showed 72 % of agreement between diagnostic categories, indicating that the MTDA was providing similar information as a recognised and established diagnostic tool. However, the two assessments also showed significant differences in scores of individual questions, indicating that the MTDA could serve a useful and distinct purpose in helping the psychiatric team to diagnose children with autism. The children generally enjoyed the assessments and the music therapist felt that the test was easy to carry out and score, indicating that the MTDA was 'user-friendly'.

Throughout this thesis the author has adopted a personal style particularly when describing her own clinical work and when examining the literature. Although the two outcome investigations rigorously examined numerical data, the author also described her own impressions as the research investigation progressed.

Prologue

I have worked as a music therapist in Cambridge for the past twenty- three years. My work has been focussed on three different clinical areas: Learning Disabilities (all ages), Child Development, and Child and Family Psychiatry.

My music therapy work has never ceased to interest me. I have found that the process of communicating non-verbally through improvised music making can be completely absorbing and at times very exciting. In addition, it is a complex and unpredictable process, which I am always intrigued to think about and discuss with colleagues.

As a result, I have very much enjoyed giving lectures and workshops about my clinical work as a music therapist to colleagues or anyone interested in music therapy. Wherever possible I have used video excerpts of music therapy sessions to illustrate my points. I have particularly enjoyed the questions and discussions that have arisen out of these workshops which have always provided me with food for thought and new ideas.

The lectures and workshops have led to the making of several training videos as well as the writing of a book and numerous articles. The process of thinking about my work through giving lectures, observing videos of music therapy sessions and writing articles, not only helped me to be clearer about the processes I was engaged in, but also led to more questions being asked and to a thirst for further investigation.

The next logical step was to set up a research project, which I was able to do in the early eighties with the support of the multidisciplinary team I was working with at the time. This was a five-year investigation into music therapy with groups of profoundly learning disabled adults and it led to a Master of Philosophy award. The main tool we used to measure our results was detailed video-analysis.

Throughout the nineties, I became aware of the intricate similarities between the non-verbal exchanges I was having with non-verbal clients, and my pre-verbal

communication with my own babies. Between 1988 and 1992, I had four children of my own but I continued to work as a part- time music therapist in Child Development and Child and Family Psychiatry. During this period I set up a number of music therapy groups with mothers and young children. In these groups we used musical interactions to help mothers who were experiencing difficulties relating to their children.

1994 was also the year that the music therapist Helen Odell-Miller and I established a music therapy training course at Anglia Polytechnic University. As a part-time lecturer I found I was being encouraged by the University to initiate research investigations. Some research funding was available from the University, which meant that I was able to employ a part time research assistant and set up a two-year investigation looking into music therapy with the group of mothers and children I had recently set up. In this project we used questionnaires as well as detailed video-analysis to analyse our results.

In the three different client groups I have worked with, a significant proportion of people have been on the autistic spectrum. In the nineties this proportion gradually increased. At present, about 90 % of the Child Development Centre referrals to music therapy are children with autistic spectrum disorders. At the Croft Unit for Child and Family Psychiatry approximately 50% of the children are assessed for autistic spectrum disorders.

One of the reasons that so many children on the autistic spectrum are referred to music therapy is that music therapy is particularly effective in enhancing non-verbal communication. Over the years, I have developed particular ways of working that are specific to this client group and new approaches and ideas continue to emerge.

When the opportunity arose to apply for a two-to-three-year music therapy research fellowship, I knew at once that I wanted to investigate music therapy with children on the autistic spectrum. I knew that I wanted to spend time examining and describing the work that I was doing, and set up investigations that would hopefully back up and enhance my

observations. I foresaw that I would use video analyses and questionnaires to evaluate my results, as I had done on my previous research.

At the Child Development Centre, I wanted to look at my work with pre-school children with autistic spectrum disorder which seemed to be developing into a specific way of working. Because of my previous research with groups of mothers and young children I was also particularly interested in the role I played in enhancing the relationship between the child and the primary carer.

At the Croft Unit for Child and Family Psychiatry, music therapy was being used to help the team to examine the children's strengths and difficulties and would sometimes lead to a diagnosis of autistic spectrum disorder. Here again I was developing specific music therapy diagnostic procedures, which I wanted both to describe and evaluate.

I was fortunate enough to be successful in obtaining the research fellowship, which has allowed me to pursue my research. Like my previous research projects, this study has come directly out of my clinical practice. The overall aim of this and my previous investigations has been to find out more about the work that I was doing so that I could build on those aspects that were successful and improve on areas that were not so effective.

By finding out more about my own work and evaluating the effectiveness of this work, it has been possible to formulate specific music therapy approaches with distinct client groups which can now be used by other music therapists.

In this way, although the initial aim in all my research has been to improve my own clinical practice, I have then formulated new music therapy approaches and methodologies which have and hopefully will continue to benefit the profession as a whole.

I have purposefully written in a very personal style because this thesis principally came out of my own clinical work. Nevertheless, I acknowledge and refer to many other clinicians work, and my personal style does not interfere either with the clarity of my arguments or with the rigour of the two outcome investigations.

Chapter 1 :: Introduction

1.1: Structure of Chapter 1

In this chapter I will start by stating the overall aims of this investigation and then look at the overall structure of the thesis.

I will go on to outline my methodology as well as reflecting on how this methodology fits in with the ideas of other music therapy researchers.

I will then briefly define autistic spectrum disorder and give an overview of the history of the condition. I go on to describe approaches to treatment and diagnostic tools, focussing particularly on the ADOS, (Autism Diagnostic Observation Schedule) which I use in the investigation I describe in chapter 5.

Finally, I will describe my general approach to music therapy and outline why I feel that music therapy is particularly useful when working with children with autistic spectrum disorder and their parents. A more in depth description of my work with pre-school children with autistic spectrum disorder and their parents and my Music Therapy Diagnostic Assessments for children with suspected autistic spectrum disorder is included in Chapter 3. The video that accompanies this thesis is also referred to and explained in Chapter 3.

1.2: Aims of the investigation

My initial aim in carrying out this research was to find out more about my work and improve my clinical practice when working with children with autistic spectrum disorder and their families.

After over twenty years of clinical experience as a music therapist with children with autistic spectrum disorder, some theories and methods of working were emerging which needed describing, reflecting upon, and formulating into a specific approach. I hoped that by carrying out this investigation I would contribute to the existing knowledge and

expertise in this area and provide some practical guidelines for music therapists wishing to work with children with autistic spectrum disorder. I decided to focus on two specific areas of music therapy with children on the autistic spectrum. These were: music therapy treatment with pre-school children with autistic spectrum disorder and their parents, and music therapy diagnostic assessments with children between the ages of four to twelve suspected of being on the autistic spectrum. As well as describing my approach in these two clinical fields in detail, I set up outcome studies to gain quantitative as well as qualitative data in these areas.

1.3: Overall structure of this thesis

After introducing the topic in Chapter 1, my next step was to review the relevant literature to see how the work of other clinicians overlapped or differed from the work that I was doing (Chapter 2). The literature review enabled me to gain an overview of music therapy with children with autistic spectrum disorder and also be clear about which aspects of my work were shared with other colleagues, and which aspects of my work were more specific to my particular approach.

After the literature review, I described the work that I was doing as thoroughly and clearly as possible in order to determine which aspects of my work defined my particular approach. For the purposes of this investigation I decided to focus on two aspects of my work with children with autistic spectrum disorder. These were: individual work with pre-school children with autistic spectrum disorder and their parents at the Child Development Centre, Addenbrookes, and music therapy diagnostic assessments with children between the ages of four and twelve with suspected autistic spectrum disorder at the Croft Unit for Child and Family Psychiatry (Chapter 3). I have produced a forty-minute video to illustrate the characteristics of my work with pre-school children with autistic spectrum disorder and their parents. The video illustrates the points made in the first half of Chapter 3.

The combination of writing about my work and producing the video, enabled me to conceptualise my approach and to reflect on why I worked in this particular way.
The third step was to set up two investigations, one with pre-school children with autistic spectrum disorder and their parents (Chapter 4) and one looking at Music Therapy Diagnostic Assessments with children suspected of being on the autistic spectrum (Chapter 5). Both these studies asked quite specific questions, but as is often the case with these types of investigations, a wealth of other information as well as many new questions, emerged.

Finally, I have tried to bring all this material together and reflect on how the two outcome investigations support the approaches that have evolved through clinical practice (Chapter 6). In this chapter, I also think about how the process of carrying out this research project has influenced me as a music therapist, and what suggestions I might offer for future research in this area.

This research project was carried out over a period of three years. A time line is included in Appendix 1.1 in order to get an idea of when different aspects of the investigation took place. It might, for example, be useful to know that the video that accompanies this thesis was only made after all the experimental work had been completed.

1.4 Methodology

The methodology used for each of the two outcome studies will now be briefly outlined. These methodologies will be described in greater detail in Chapters 4 and 5.

1.4.1 The investigation into pre-school children on the autistic spectrum and their parents

In this study, I used a series of Single Subject Experimental Designs (Kazdin 1982; Morley and Adams 1989). In his book Kazdin (1982) explains that single case designs provide a way of rigorously evaluating the effects of interventions with the individual

case. He also points out that much of traditional research in psychology was based on the careful investigation of individuals rather than on comparisons between groups. As each of the dyads I was treating had very specific individual needs, this methodology seemed appropriate. Aldridge (1996) explains that single case designs can accommodate the individual clinical needs of each client as well as the particular approach of the music therapist. This was important as I wanted to investigate the work that I was doing rather than modify my approach to meet the demands of a particular research methodology. Gfeller (1995, p.50) indicates that in the USA particularly, many music therapy research investigations have limited clinical relevance to practising music therapists. For example, studies investigating musical preferences or musical abilities of specific groups of people may be interesting but not necessarily of immediate practical help to working music therapists. He suggests that this could be partly because of the need many music therapy researchers have felt to adhere to psychological research paradigms, which might not be suitable for evaluating music therapy processes. It could also be partly because many research investigations are carried out by relatively inexperienced clinicians where the principal motivation is achieving an academic qualification rather than answering a 'burning' clinical question. As an experienced clinician I had many questions I hoped my research investigation would help to answer. By using single case research designs I hoped that my research would remain clinically relevant not only to my own practice but also to other music therapists practice.

The literature review in Chapter 2 shows that other music therapy researchers investigating children on the autistic spectrum such as Plahl (2000) and Hock (2002) have also used single case designs.

In addition I was confident about this methodology because I had already successfully used single case design methodology in two previous research investigations (Oldfield and Adams 1990, and Oldfield *et al* 2003). My previous investigations as well as Plahl and Hock's work are described more fully in Chapter 2.

However, I decided not to use the traditional Single Case Design where base line observations are made, treatment is applied and then changes are evaluated. This original Single Case Design Model was designed for clinical interventions where sudden marked changes occur (Kazdin 1982). In my work with pre-school children with autistic spectrum disorder, I was not expecting sudden marked changes but was hoping for gradual, slow and progressive changes. Each session was therefore videotaped to allow detailed behavioural observations to be made.

Ten pre-school children with autistic spectrum disorder diagnoses, who had been referred to music therapy at the Child Development Centre at Addenbrookes were investigated over a period of 18 to 26 weekly, half hour, music therapy sessions. In addition, the mothers (and/or fathers) were interviewed and completed questionnaires before and after treatment to determine how they felt their child was functioning and to establish whether their perception of their child had changed during the treatment.

1.4.2 The Investigation into Music Therapy Diagnostic Assessments

This study investigated how music therapy assessments can help the psychiatric team to diagnose children suspected of having pervasive development disorders. Overlaps and differences between the MTDA (Music therapy diagnostic assessment) and the ADOS (Autistic diagnostic observation schedule) were noted. A scoring system similar to that used for the ADOS was applied to the MTDA. 30 children receiving both MTDA and ADOS tests over a period of two years were investigated.

Scores for ADOS tests and MTDAs were compared with particular attention to overlaps, differences and patterns for different parts of each of the assessments. This data was supplemented by an analysis of the questionnaires filled in by the psychiatrist and the music therapist after each test, and an analysis of the audio-tapes of the children's interviews.

1.4.3: The role of the research assistant

At the beginning of the project I decided that I wanted to use some of the research funding to employ a part-time research assistant. Emma Carter was therefore employed partly as a music therapist at the Croft and at the Child Development Centre to replace my clinical hours and give me time to do the research, and partly as my research assistant.

Her main jobs as research assistant in the Child Development Centre Project were:

- to interview the parents pre and post music therapy treatment;
- to videotape the music therapy sessions;
- to analyse all the videotapes of the music therapy sessions (after I had given her exact instructions about which codes to use for each child and parent);
- to help collect and count the data from the video-analysis.

In the Croft project she:

- interviewed the children after the Music Therapy Diagnostic Assessments and after the ADOS tests;
- videotaped all the Music Therapy Diagnostic Assessments;
- filled in MTDA scoring sheets for each of the children.

Having a research assistant meant that independent interviews with children and parents that would not affect or be affected by music therapy assessments or treatment could be carried out. I also needed someone to videotape the sessions and somebody other than myself to analyse the videotapes.

1.4.4: Some reflections on qualitative and quantitative approaches to research methodology

An on-going debate amongst music therapy researchers has been about whether qualitative or quantitative research methods should be used in music therapy research.

According to Wheeler (1995, p.11), quantitative research:

> …tests theories through procedures for scientific objectivity, including careful observation of behaviour, the isolation and manipulation of variables, and hypothesis testing.

Qualitative research on the other hand describes:

> …a broad category of research that reflects the belief of its followers that: not all that is important can be reduced to measurements, it is essential to take into account the interaction between the researcher and the participant(s) being studied, findings cannot be generalized beyond the context in which they are discovered, and values are inherent in and central to any investigation. (Wheeler 1995, p.11).

Wheeler (1995, p.12) goes on to explain that some music therapy researchers feel that all research combines elements of both qualitative and quantitative methodology and that there is no need to choose between the two models. Other music therapists feel that the two approaches reflect opposite philosophical approaches and are therefore incompatible.

Some music therapists have strongly rejected any research that means that they will have to deal with numbers. Levinge (2000) explained that when she set up her PhD research project she informed her supervisor at the outset that if anything had to be counted she would not include it in her research. On the other hand Edwards (2002) advocated that music therapists should be familiar with, and if necessary be prepared to work within, the Evidence Based Medicine (EBM) research framework which draws primarily on quantitative investigations.

Bruscia (1995, p.73) writes that one option for music therapy researchers is to use a quantitative approach for those aspects of the work that lend themselves to quantification and linear thinking, and a qualitative approach for the aspects of the work that rely on interpretation and are based on interpersonal relationships. A similar point is made by Bunt and Hoskyns (2002, p.274) when they suggest that certain types of questions demand certain types of research strategies. Rogers (2000, p.13) suggests that although it

may in some ways be 'more comfortable' to adhere either to a quantitative or a qualitative approach, the real world is governed by multiple contexts and there should be room for both qualitative and quantitative approaches.

Stige (2002) suggests that music therapy researchers can avoid becoming polarised either in a qualitative or a quantitative position. Towards the end of his book, he concludes that:

> …..the practice and study of music therapy needs an inclusive and eclectic concept of truth, acknowledging the relevance of at least three perspectives: the empiricist perspective (correspondence), the hermeneutic perspective (coherence/meaning), and the pragmatic perspective (application/effect)…….these arguments suggest that music therapists could make their voices heard among those who try to link science and the humanities in some way or another (Stige 2002, p.307).

In my two investigations I asked focussed questions at the outset, which is a characteristic of a quantitative approach. Nevertheless I was investigating my own work and was interested in how it was evolving which was a characteristic of a qualitative approach. Although my first objective was to find out more about and improve my clinical practice (qualitative approach), I was also keen to demonstrate that music therapy diagnostic assessments had a part to play in child and family psychiatric teams (quantitative approach). In spite of the fact that the two investigations I set up were quantitative in that they asked specific questions at the outset, I was not only interested in the answers to these questions. In a sense, I had a qualitative approach to these quantitative investigations because one of my main interests lay in the learning that took place through these investigations.

To summarise these points, the following table shows some of the qualitative and quantitative aspects of this investigation.

Table 1.1: Qualitative and quantitative aspects of my research:

Qualitative aspects	Quantitative aspects
Descriptive and reflective work	Detailed behavioural analysis
Investigating my own work	Use of numbers / statistical analyses
Interest in learning through research process	Focussed hypotheses
Aim to improve practice	Demonstrate usefulness of music therapy

1.4.5: What constitutes research?

In a more general context the opinion as to what constitutes research also varies greatly. For example, many medical practitioners not only dismiss qualitative research findings, but they also dismiss quantitative findings from research which does not include randomised control trials as part of its methodology. Thus, in a recent one-day conference on Autism and Asberger Syndrome organised by the Royal Society of Medicine, Howlin (2003) indicated that there was no research evidence to support many interventions with children on the autistic spectrum, including music therapy. Nevertheless, Howlin and Rutter (1989, p.248) also advise that the three research routes of biological investigation, psychological study and therapeutic innovations should be pursued simultaneously. Two general textbooks on autism (Baron-Cohen and Bolton, p.70; Trevarthen *et all*, p.172) include specific sections on music therapy. It therefore appears that although the value of music therapy as a form of treatment and, as a consequence, the importance of research in music therapy is acknowledged, the current research literature is not felt to be conclusive by some professionals. In the music department at Anglia Polytechnic University in Cambridge, however, the word 'research' is used more broadly and may, for instance, include studies of new ways of interpreting or analysing compositions.

Gfeller (1995, p.56) suggests that: "In the best possible research worlds, perhaps the most compelling reason for a particular methodology in music therapy research is the philosophical framework of the researcher regarding musical response".

Later on in this Chapter (1.6), I describe my music therapy approach in some detail. Thinking about methodology and in response to Gfeller's suggestion above, my philosophical framework regarding my clients' or my own musical responses is that these responses provide the means by which I will communicate and interact with my client. I believe that every person has the potential to interact through sounds in some way and that it is my job to find out what the clients specific ways of interacting might be. The musical responses are crucial and central to my work, but remain a vehicle rather than an

aim in themselves. Thus, in my research methodology, my starting point will be the therapeutic aims, or diagnostic criteria that I have for each case.

Edwards (1999a) outlines four social science approaches relevant to research in music therapy: positivism, postpositivism, constructivism and critical theory. She writes:

> What has traditionally been viewed as "quantitative research" in the music therapy literature is arguably postpositivist because of its concern with setting and multiple testing. What has been considered "qualitative research" is also to be positioned within the postpositivist paradigm. (Edwards 1999a, p.79).

My research investigation could be described as postpositivist in that I am investigating music therapy processes as they are being practised rather than changing aspects of my work for the purposes of the research. However, my concerns with the relationship between the principal carer and the child (explored further later in this Chapter) could be seen as a constructivist approach.

Other music therapy researchers have written about difficulties arising from trying to fit into an established methodological pattern. Thus Ansdell and Pavlicevic (2001, pp. 97-98) suggested that researchers should avoid worshipping and defending a research methodology for its own sake, but focus on the questions the research is asking and find appropriate methodologies to answer those questions.

I have developed different approaches to my research and have used a mixture of different research methods depending on whether I am reviewing literature, describing and reflecting on my work or organising and writing about the two outcome investigations. This study was neither completely qualitative nor completely quantitative, but I tried to adjust my way of thinking and my methods of analysing my results to the types of questions I was asking at the time. I felt that it was important to keep in mind that I was primarily interested in evaluating my own clinical work and, therefore, I adapted the research methodology to enable me to address the questions I wanted to answer. I did not want to change the questions I was asking or adapt the treatment in any

way, in order to conform to established research methodologies. Instead I combined qualitative and quantitative approaches because this combination was appropriate for what I wanted to investigate.

In spite of this varied approach, I was sure that this was a thorough and interesting research investigation. According to Bruscia (1995, p.27):

> Research is a systematic, self monitored inquiry which leads to a discovery or new insight which, when documented and disseminated, contributes to or modifies existing knowledge and practice. Research differs from clinical practice in the need for metareflection on the data, goals, roles, beneficiaries, use of knowledge, and consumers.

I felt that this research certainly met these criteria.

At the beginning of each chapter I have outlined the structure of the chapter and the systems used to address the questions I was asking. In chapters 4 and 5, the methodologies used in the two experimental projects were fully described and explained.

Before continuing with my investigation, I would now like to briefly focus on autistic spectrum disorder as this project centres on children on the autistic spectrum.

1.5: Autistic spectrum disorder

Many different terms such as “autism”, “childhood autism”, “pervasive developmental disorder” and “autistic spectrum disorder” are used in the literature. Throughout this thesis I have and will continue to use the terms: “autistic spectrum disorder”, “ASD” or “children on the autistic spectrum”. The term “autistic spectrum disorder” has become commonly used in the last five years since it has been recognised that people on the autistic spectrum disorder may vary greatly from one another while all having some autistic features. “Asperger syndrome”, “autism” and “pervasive developmental disorder of a non specific type” (PDDnos) are all considered to be autistic spectrum disorders. The

"autism" diagnoses is given when children display many of the symptoms, whereas the "autistic spectrum disorder" diagnosis may be used when a child has less severe symptoms. However "autistic spectrum disorder" is also used as an umbrella category including all three diagnoses. Debate about which terms should be used is on-going. Thus Coleman (2002) argues that autism is not a spectrum which describes one disease but a syndrome which describes many different diseases. I have chosen to use the term "autistic spectrum disorder" partly because is the term currently in use in the two clinical settings described in this thesis, and partly because it is a wide definition which embraces the large range of children involved in the two outcome studies in this research investigation. I return to the topic of terminology at the end of section 1.5.1.

There are many textbooks on autistic spectrum disorder and this subject has been widely written about, researched and referred to by music therapy pioneers Alvin and Warwick(1991) and Nordoff and Robbins (1977), and more recently by music therapists such as Robarts (1996), Storey (1998), Di Franco (1999), Woodward (1999) and Bailey (2001). There is not enough space in this thesis to write yet another comprehensive overview of 'autistic spectrum disorder'. Instead I will highlight key facts that are relevant to the two outcome investigations in Chapters 4 and 5.

1.5.1: Definition

For the purposes of this investigation I have referred to the DSM IV definition. (American Psychiatric Association, 1994). This was the definition used by the people who developed the Autistic Diagnostic Observation Schedule (ADOS) (Lord *et al* 1989) and the people who developed the Pre-linguistic Autism Diagnostic Observation (Dilavore and Lord 1995). As I have used the ADOS in the investigation described in Chapter 5 and the Pre-linguistic Autism Diagnostic Observation in the investigation in Chapter 4, it seemed logical to refer to this definition.

In the DSM IV the diagnosis of 'Autistic Disorder' came under the general category of 'Pervasive Developmental Disorders'. This section contained Autistic Disorder, Rett's

Disorder, Childhood Disintegrative Disorder, Asperger Disorder and Pervasive Developmental Disorder Not Otherwise Specified (Including Atypical Autism).

This was how the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders described 'Autistic Disorder':

> The essential features of Autistic Disorder are the presence of markedly abnormal or impaired development in social interaction and communication and a markedly restricted repertoire of activity and interests….The disturbance must be manifest prior to age three years….75% of children with Autistic Disorder also have a learning disability…. (American Psychiatric Association 1994, p.66-67).

More detailed diagnostic criteria for Autistic Disorder as defined by the American Psychiatric Association have been included in Appendix 1.2.

This description matched up closely to the 'triad of impairments in communication, interaction and imagination' described by Lorna Wing and Gould (1979) and referred to by Baron Cohen and Bolton (1993). Appendix 1.2 showed that in the DSM IV an attempt was being made to make the diagnoses easier by being more specific, but the areas of difficulty described were the same as those described in the triad of impairments.

The essential features of Asperger Disorder are similar to those of Autistic Disorder, however, in contrast to Autistic Disorder, there are no clinically significant delays in language, cognitive development and curiosity about the environment (American Psychiatric Association 1994, p.75). More detailed diagnostic criteria for Asperger Disorder have been included in Appendix 1.3.

The American Psychiatric Association (1994, p.79) suggests that the category 'Pervasive Developmental Disorder Not Otherwise Specified (Including Atypical Autism)' should be used when some but not all of the features of Autistic Disturbance are present and when no other diagnostic description is appropriate.

When describing 'autism' the DSM IV mentions that 'autism disorder' is sometimes referred to as 'early infantile autism', 'childhood autism' or 'Kanner's autism'. (American Psychiatric Association 1994, p.66). The labels commonly used in the two clinical settings where I work also vary. At the Croft Children's Unit, for many years we used to refer to children with Autistic Disorder, Asperger Disorder or Pervasive Developmental Disorder Not Otherwise Specified, as 'PDD' (Pervasive Developmental Disorder). This might have been because all the children that we saw at the Croft from the PDD category (as described by the DSM-IV) were from these three diagnostic categories and we never diagnosed children with Rett's Disorder or Childhood Disintegrative Disorder.

As explained at the beginning of this section, the common label that we have used both at the Croft Children's Unit and the Child Development Centre at Addenbrookes for Autistic Disorder and Asperger Disorder is 'ASD' (Autistic Spectrum Disorder). This new term may reflect the now more commonly held view that Autistic Disorder and Asperger Disorder are on the same continuum rather than being two separate conditions (Attwood 1998 p.23).

Pervasive Developmental Disorder Not Otherwise Specified (PDDnos) or Atypical Autism are sometimes referred to as 'Borderline Autism' and I have used this term as well as 'Autistic Spectrum Disorder' throughout this thesis.

1.5.2: History of autistic spectrum disorder, causes, different attitudes

Attwood (1998, p.15 and 16) explained that in the early nineteen fourties, Kanner, in the USA, and Asperger, in Austria, both used the term 'autism' to describe similar patterns of symptoms in children they were treating. However, whereas Kanner's work quite quickly dominated general views on autism, Asperger's work remained largely ignored for thirty years. Lorna Wing first used the term 'Asperger Syndrome' in a paper she published in 1981 (Wing 1981), and as I explained in the previous section, autism and asperger

syndrome are now often considered to be subcategories of the wider autistic spectrum disorder.

It is now generally accepted that autistic spectrum disorder has a biological cause and is the consequence of organic dysfunction (Frith 1990, p.69). Although we do not yet know exactly what this biological cause is, we do know that there are a number of neurological dysfunctions, such as EEG abnormalities, which are more frequently found in children with autistic spectrum disorder than in the normal population. Frith concluded her chapter on the biological roots of autistic spectrum disorder by saying that:

> We should think not just about the 'the' cause of autism but about a long causal chain…..The hazards can be of many kinds, including faulty genes, chromosome abnormality, metabolic disorder, viral agents, immune intolerance, and anorexia from perinatal problems (Frith 1990, p.80).

During the nineteen fifties, sixties and seventies, many specialists felt that autistic spectrum disorder was caused by psycho-dynamic conflicts between the mother and the child. Bettelheim (1967) even went so far as to suggest that children with autistic spectrum disorder should be removed from their parents.

More recently Howlin, Baron-Cohen and Hadwin (1999) have argued that children with autistic spectrum disorder have a 'Theory of Mind (ToM) deficit'. They developed special teaching methods for verbal children with autistic spectrum disorder between the ages of 4 and 13 to learn to 'Mind-Read'.

However, Richer (2001) argued that it is autistic spectrum children's failure to engage in successful interactions from an early age which accounts for their difficulties rather than a specific 'Theory of Mind' deficit. He took an ethological approach based on detailed observation of children with autistic spectrum disorder. This approach argued that:

> ….autistic children had not absorbed the skills and understandings of their culture

> as much as other children, and that one factor constraining them was their tendency to avoid social interaction (face to face and joint attention) in which the transfer of culture took place……autistic children were in a state of motivational conflict, in which motivation labelled avoidance or fear, was stronger than in other children and tended to inhibit other motivations such as sociability more than other children. (Richer 2001, p. 24)

Later on he suggested that because of this avoidance, autistic spectrum children's social interactions were often not reciprocal.

> The result was that the interaction with autistic children often broke down and there was little negotiation of shared meanings. This breakdown constrained autistic children's acquisition of the skills of their culture: language, understanding subtle social conventions, and so on. (Richer 2001, p.29)

He also indicated that the focus of therapy should be:

> Trying to create the conditions in which the early social interactions where self and other are normally integrated can take place (Richer 2001 p.50).

Richer's work ties in very closely to my approach. The view that I have supported from my clinical experience and my research is that young children with autistic spectrum disorder may initially respond to other people but find it difficult to maintain interest in communication. This is sometimes because the child may be actively avoiding contact. At other times, other things (such as shapes of objects, or the way objects move) appear more interesting and stimulating to the child than interacting with another person. As the child grows older patterns of 'non-communication' become more entrenched. The child replaces the stimulation that he or she would normally get from interactions with other people, with repetitive or ritualistic uses of objects. This is why I feel that it is important to intervene early to encourage and promote more communication between the primary carer and the child with autistic spectrum disorder. In this way, future isolation and

autistic patterns of behaviour may be reduced. I also believe that as a music therapist I am in an ideal position to observe each individual child's patterns of communication and avoidance in great detail, thus sometimes overcoming the breakdown in communication described by Richer.

1.5.3: Treatment approaches

Although it is no longer believed that autistic spectrum disorder can be cured, there are quite a number of very different treatment methods and approaches that are believed to be helpful to children with autism spectrum disorder and their families. I will mention just a few of these here and draw out parallels with my particular music therapy approach, which will be expanded on in more detail in Chapter 3.

The TEACCH program (Treatment and Education of Autistic and related Communication-handicapped Children) is used in a number of schools in the UK. This approach was developed in the USA and is the only university-based state-wide programme mandated by law in the United States (Notomi 2001). As Storey (1998) explains, the TEACCH system sets out a clearly structured and individualised programme for each child and encourages input and liaison with the families of the children. The children are encouraged to develop an understanding of their routine for the day so that they can function independently within a familiar framework.

The Tavistock Autism Workshop Approach is informed by psychoanalysis, infant observation and infant development (Reid, Alvarez and Lee 2001). After extended therapeutic assessments which can last around three months some children will be offered individual psychotherapy sessions from one to five times weekly for a number of years, while the parents are offered support for themselves. Other families continue to be seen as a family group. Although this approach is obviously longer and more intense than my work there is a similar focus on each child having unique patterns of communication and on the need to support the family. There is also a recognition of the importance of being aware of the feelings of the children, the parents and the therapist.

Janert (2001) works as a psychologist with children with autistic spectrum disorder and describes how useful interactive games are to "reclaim non autistic potential". These games are based on early mother-baby interactions.

Janert (2001) as well as Zappella (2001) and Newson (2001) strongly emphasise the importance of intervening as early as possible to try and establish communication patterns between parents and young children with autistic spectrum disorder.

There are elements of all these treatment approaches that are relevant to my work. The TEACCH approach is similar to my work in that the predictable structure to my sessions is very important, as well as my liaison with the parents of the children. Although the Tavistock workshop approach is longer and more intense than my interventions, there is a similar focus on each child having unique patterns of communication and on the need to support the family. There is also a recognition of the importance of being aware of the feelings of the children, the parents and the therapist. Janert's (2001) interactive games have a great deal in common with the way that I work and I will come back to her work when I describe my approach in detail in Chapter 3.

1.5.4: The Autistic Diagnostic Observation Schedule (ADOS)

Lord *et al* (1989) mention several different observational scales for the diagnosis of autism such as the Behaviour Observations Scale for Autism (BOS; Freeman, and Schroth, 1984) and the Autism Observation Scale (Siegel, Anders, Ciaranello, Bienenstock and Kraemer, 1986). However, they point out that these scales:

> ….are less effective in identifying higher functionning autistic children and adolescents than autistic children who are severely handicapped (Lord *et al* 1989 p. 187).

The Autistic Diagnostic Schedule (ADOS) was originally developed to discriminate between autistic children from 6 years onwards with mild or no mental handicap from

children with matched I.Q.s who were not autistic (Lord *et al* 1989). Over the years the test has evolved slightly and the current version used in this investigation is a little different from the one originally described in the 'Lord *et al*' article.

There were two aspects of the ADOS which made it different to other diagnostic tests and which were also the reason why it was a good test to use as a comparison for my new music therapy diagnostic assessment. These were the fact that the ADOS was an *interactive* schedule, and the fact that it allowed the rating of the *quality* of social behaviour and not just its absence or its occurrence in limited quantities. The ADOS presents the child with a range of different social situations for him or her to react to. In each situation, the ADOS examiner will interact with the child to elicit certain target responses. As a result, the ADOS can only be administered by people who have experience of interacting with children with autistic spectrum disorder, and who are specially trained to use this test (Lord *et al* 1989).

The ADOS test varies slightly depending on how old and how verbal the child is. In 1995 Dilavore *et al* adapted the ADOS for pre-linguistic children and called it the Pre-linguistic Autism Diagnostic Observation Schedule (PL-ADOS). (Dilavore P, Lord C and Rutter M 1995). The children who were included in the Child Development Centre Project (Chapter 4) all had this PL-ADOS before I started working with them and were all found to be on the autistic spectrum. In Chapter five the ADOS test I compare my Music Therapy Diagnostic Assessments with is the 'schedule 3 ADOS' for children who have not reached puberty but are verbal. This test consists of twelve activities and a 'break' during which the child continues to be observed and scored.

General ratings are made on a three point scale from 0 to 2. They were
0 = within normal limits
1 = infrequent or possible abnormality
2 = definite abnormality

The ratings are made in four areas:

A: communication / language
B: reciprocal social interaction
C: imagination / creativity
D: Stereotyped / restricted behaviours.

Sections A and B are considered the most successful in predicting diagnosis by the authors of the test. Nevertheless, sections C and D are also looked at carefully in the test because they are clinically relevant.
In Chapter 5, I will explain how I used a similar scoring system to quantify the results of my Music Therapy Diagnostic Assessments (MTDAs). It was then possible to compare the results of the two tests carried out on the same children.

Having briefly described those points about autistic spectrum disorder that I feel are relevant to this investigation, I will now give an overview of my music therapy approach. I will include general points in this chapter and specific points about the way I work with children with autism in Chapter 3.

1.6: My music therapy approach

In this section I am going to describe my general music therapy approach. I will refer to the literature in more depth in Chapter two. In Chapter three I will look specifically at what characterises my approach with pre-school children with autism spectrum disorder and their parents, and at music therapy diagnostic assessments for children who may be on the autistic spectrum. This is particularly relevant as the literature review in chapter 2 shows that no systematic approaches have so far been developed in these two areas.

1.6.1: Orientation

Wigram *et al* (2002) describe five music therapy models: guided imagery and music – the Bonny Model; analytically orientated music therapy – the Priestly Model; creative music

therapy – the Nordoff-Robbins Model; free improvisation therapy – the Alvin Model and finally, Behavioural Music Therapy.

As I trained with Juliette Alvin in 1979, it is not surprising that many aspects of my approach fit into this model. Wigram et al (2002, p.131) indicate that:

> Alvin's method is musical:
> - All the client's therapeutic work centres around listening to or making music.
> - Every conceivable kind of musical activity can be used.
> - Improvisation is used in a totally free way, using sounds or music that are not composed or written down beforehand.
> - By sounding the instruments in different ways, or by using unorganised vocal sounds, inventing musical themes allows great freedom.
> - Free improvisation requires no musical ability or training and is not evaluated according to musical criteria.
> - The therapist imposes no musical rules, restrictions, directions or guidelines when improvising, unless requested by the client. The client is free to establish, or not establish, a pulse, metre, rhythmic pattern, scale, tonal centre, melodic theme or harmonic frame.

Although, like Alvin, my method is musical, I am also clear that I use music as a means to achieve non-musical aims. For example, if I am trying to attract the attention of a child with autistic spectrum disorder who is wandering around the room apparently unaware of anyone else in the room, I might follow the child and accompany his or her movements with improvised music on the clarinet. If the child then looks up at me I might turn away and try to entice the child to follow me. The *aim* is to establish some basic interaction between us. The *tool* I have used is the music on the clarinet, which motivates the child to take an interest in me.

More specifically than Alvin, in my approach, I think that it is important, particularly at the beginning of the work, that the children view our sessions as a positive time together,

which they want to be part of. As we get to know each other and the child and the primary carer gain my trust, I might, at times, try to encourage the children and their primary carers to do things that they find difficult. If a child wishes to express frustration, anger or sadness, I will provide opportunities for these feelings to be expressed through music making. Nevertheless, the overall experience must remain positive enough for the child to be motivated to come back into the room again the following week. As Coates (2001) indicates, it is essential to develop a trusting and communicating relationship with the child with autistic spectrum disorder. It is my belief that this can only be achieved if the general experience of the music therapy session is a positive one.

Most of the children with whom I work, are probably not aware of the therapeutic nature of my intervention. I would imagine that they associate coming to see me with a time when they make music and interact with me through playful musical exchanges. It is usually through the musical interactions that we have that progress occurs rather than through the children gaining insight into their own difficulties.

However, with the parents of the children, I will be very clear about what I hope to help the children with, and we discuss the child's progress at the end of every session. For example, we might agree that it would be helpful to focus on encouraging a child to vocalise, or to encourage a child to remain focussed on one activity for longer rather than rushing from one to another. We might also discuss in what way the music therapy sessions are going to help the mothers of the children. For example, some mothers are keen to use music therapy sessions to help their child to be more independent and do things on their own rather than always be on their mother's lap. However, here again there are some aspects that are not always addressed verbally, even though I might have a very clear idea of what I'm hoping for. I might, for example, notice that a mother who is low in confidence is mismatching musically in her interactions with her child. By this I mean that she is perhaps not listening to her child's musical suggestions well enough or conversely she may always be copying her child, never contributing her own ideas, so the 'conversation' can not develop. In these cases, I will probably not draw the mothers' attention to this but try to gradually model more effective patterns of interactions, while

providing verbal support and encouragement for the mother. Once the mother's confidence has grown and she has picked up new ways of interacting non-verbally with her child, it might be possible to help her gain insight into the learning process that has taken place.

Alvin believed that it was important for music therapists to use their first instrument in their work and described several case studies where she uses her cello. (Alvin 1966). Similarly, I use my clarinet in almost all my music therapy sessions. As the clarinet is a wind instrument and children often become quite fascinated by the instrument itself, it could be seen as a 'intermediary object' as described by Winnicott (1971). Wigram et al (2002, p.132) indicate that Alvin thought that the musical instrument represented a 'safe intermediary object'. However, I think it is the sound the instrument makes and the fact that I can physically follow the child around the room which provide the link between the two of us rather than the instrument itself. I will explore these aspects of my work further in Chapter 3 and on the video that accompanies the thesis.

There are a number of different psychological models, which are relevant to my music therapy approach.

Developmental models such as the example given by Carr (1999, p.25) of Newman's revision of Erikson's psychological stage model are often helpful to understand what stage a child is at. If a child is mouthing objects continuously, for example, I will accept that this is probably a 'phase' they are going through rather than feeling they constantly need to be distracted. Nevertheless, some autistic spectrum children do not follow usual developmental patterns and may, for example, use whole sentences before babbling in any way.

Behavioural approaches based on learning theories such as Carr's (1999, p.131) guidelines for behaviour-control programmes are particularly useful when managing aggression or extreme resistance. For instance, I often have to make a conscious effort not to get drawn into negative patterns of behaviours. Some children with autism find that

the only way they can interact with adults and feel in control of the situation is by getting that adult to tell them to stop doing something. In these cases, I work hard to react in a very bored way to misdemeanours but give the child lots of excited praise as soon as anything positive occurs.

Psycho-dynamic theories often help me to understand my work better. Sometimes, for example, I find that I am trying to 'do' too much and not waiting or listening to the child enough. Clinical supervision sessions will help me to realise that I may be picking up feelings of frustration and lack of control from the child by counter-transference rather than these being 'my own' feelings. I am also often aware that the ways that parents behave with their child may be influenced by unresolved issues of grieving for the healthy child they wished for, even if on the surface they appear to accept and understand the child's diagnosis. For example, parents might resent anyone other than themselves being able to 'get through' to their child. They want to be valued as the skilled, good parent who can interact with a difficult child with autistic spectrum disorder in order to compensate for being a 'bad' parent in producing an 'abnormal' child in the first place.

Thus, I do not feel that I subscribe to one psychological model of working but am influenced and helped by different aspects of a number of different models.

Much has been written about the intrinsic power of music to affect the emotional state of music (Juslin and Sloboda 2001).There is not enough space in this thesis to explore this literature in depth. In my approach it is the musical impact on emotions that are intrinsically social which is of particular importance. The fact that emotions are 'catching' is explained by Juslin and Sloboda (2001, p.86). I would suggest that this transfer of emotions is enhanced and facilitated by improvised musical interactions.

Bunt and Pavlicevic (2001) indicate that the focus for therapeutic change lies in the musical relationship built up between the therapist and the patient. They write:

> Patients in music therapy improvise; the music therapist improvises. The

> participants in any improvisation make personal variations within the musical forms, the process of deciding what to play and how to shape musical events changing from moment to moment. The music therapist values and attends to all the musical communications made by the individual or group member – there is no 'right' or 'wrong' way of playing. In the psychologically and physically safe context of a therapeutic setting, the different forms of improvisation can also help an individual to try out different aspects of relating both within the self and between people. (Bunt and Pavlicevic 2001, p.186).

If asked to describe my music therapy approach in one sentence I would say that: 'I have an interactive approach, which involves live and mostly improvised music making'.

1.6.2: How I feel about my work

In this section I will explore my feelings about my work in an honest and personal style as I think that this is the best way to give the reader some insight into how I feel about my work.

Working with children with autistic spectrum disorder can be hard work and frustrating but it can also be very exciting. No two sessions are similar and each child poses new questions and challenges. Nevertheless, I almost always manage to 'get through' to the child or the parent in some way. This motivates me to continue my efforts at communication and the exchanges then can sometimes become extremely rewarding.

Before seeing a child, I will look at the previous week's notes to remind myself of my objectives and important past moments. These moments usually come flooding back to me, reminding me of the quality of our relationship. I always feel a little nervous before starting the session. Even after working in this area for twenty-three years I wonder whether I will be able to make contact, whether I will find ways of 'getting through' and whether I will recapture past intense exchanges and manage to develop these further. Deep down, I have the confidence to know that contact will almost certainly be

established in some way, but perhaps I need this slight tension to give me the adrenaline to sustain my complete focus and attention.

Once the session starts, I am one hundred percent focussed on the child and the parent and my anxiety disappears. Parents and observers often remark that I must get tired because I am often physically as well as mentally very active. Although I may feel weary before or after sessions, I rarely notice these feelings during the actual work because I am so totally immersed in what I am doing.

In many ways there are a lot of similarities between the way I feel about my music therapy work and the way I feel about performing in chamber music concerts. In both cases I am slightly nervous beforehand, completely involved during the event and usually excited and slightly elated afterwards. I explored other parallels between music therapy and chamber music in a recent public lecture (Oldfield 2001, b) and in one of my training videos (Oldfield *et al* 1999). However, the fundamental difference between playing music in a performance and playing music in music therapy sessions is that in the first setting the music is an end in itself whereas in music therapy sessions the music is a means to an end. This is clearly explained by Darnley–Smith and Patey (2003 p.43) when they examine the difference between 'performance improvisation' and 'clinical improvisation'.

1.6.3: Organisation of the sessions

Children and/or families are referred for music therapy treatment or music therapy diagnostic assessments either in writing or verbally by another member of the treatment team. I try to make contact with the family as soon as possible to arrange two half-hour music therapy sessions usually on two consecutive weeks, if possible on the same day, at the same time.

For the music therapy treatment referrals I explain to the family that, in the two first assessment sessions, I am aiming to find out whether I feel music therapy would be a

helpful intervention. After each session, I will discuss the work with the family and answer any questions. In most cases, I feel that I will be able to help, and discuss what the family feel should be the focus of my work and formulate some clear objectives. At this point I also discuss the family with the referrer and other members of the team so that we can all agree on appropriate therapeutic objectives. Occasionally, the two-week assessment period is not long enough and I suggest two further assessment sessions. As soon as I have an available space I then set up weekly sessions for the child and the parent. Every six to twelve weeks I review progress with the family and the treatment team and discuss how much longer the work might go on for.

In the music therapy diagnostic assessments, I aim to assess some of the child's strengths and weaknesses in order to assist the team in the diagnostic process. Once my two sessions are completed, I will feed back to the team and occasionally suggest a few further music therapy sessions in order either to focus on assessing a particular area of strength or difficulty or to do some short-term music therapy treatment.

1.6.4: Getting to know the child's musical likes and dislikes

In my initial music therapy sessions when I am getting to know the child and the parent, I try to find out 'where the child and the family are musically'. I am interested to find out whether a child recognises and likes specific tunes or styles, or whether, for example, a child's playing is characterised by repetitive rhythmic units. I find it helpful to think of the four different musical elements, pitch, pulse and rhythm, volume and colour in order to get as complete as possible a musical 'picture' of the child.

The following table gives examples of different children's musical 'characteristics'. Any of these musical characteristics could apply to the parent(s) of the child as well. In some cases the musical characteristics could be listed in different sections. For example: 'child reacts to expectant silences' could be seen as a duration and listed under the 'pulse and rhythm'.

Table 1.2: Examples of different children's musical characteristics

Musical elements	**Examples of different children's musical characteristics**
Pitch	- Child always chooses the same note on the piano to play - Child always chooses the same pitch of reed horn, and tries them all out until the 'right' one is found - Child often sings two notes in a descending minor third - Child will fill in gaps in songs by singing at the correct pitch and following my key changes - Child recognises 'Jingle Bells' and 'Row, Row Your Boat' - Child sings snippets of 'Twinkle, Twinkle' - Child respond to 'jazzy type' melodies - Child seems to like melodies with wide and unpredictable intervals - Child responds to vocal and instrumental glissandi
Pulse and Rhythm	- Child usually uses a consistent steady pulse. Crotchet = 120 (approximately) - Child can follow my accellerandis and descellerandis - Child enjoys sudden changes in rhythm - Child enjoys speeding up - Child will move and dance to folk dance rhythms - Child often inserts characteristic rhythmic units into the improvisations (for example crotchet, quaver, quaver repeated several times - Child responds to rhythmic versions of his or her name - Child always chooses the same combination of drums to play
Volume	- Child always plays very loudly - Child loves sudden changes of dynamics - Child responds when I change the volume of my voice - Child enjoys our common improvised crescendis and decrescendis - Child inserts accents into characteristic rhythmic phrases - Child will react to 'expectant' silences
Colour/ Timbre	- Child particularly likes the sound of the clarinet - Child often plays clusters of sounds at the bottom of the piano keyboard and listen intently to the sounds - Child likes all the 'metal' percussion, e.g.: glockenspiel, chime bars and wind chimes - Child gravitates towards the wooden percussion, e.g.: slit drums, wood-blocks - Child reacts to changes of tone colour - Child enjoys and responds to specific harmonic sequences

Although I am particularly focussed on 'finding out where a child is musically' at the beginning of the treatment process, I remain focussed on the child's musical characteristics throughout the work and will modify my musical responses accordingly.

1.6.5: My approach to improvisation and music making

In my music therapy sessions, I play the clarinet, the piano and I sing. I also play the guitar and a wide selection of simple percussion, wind and string instruments. The video analysis in Chapter 4 shows the percentage of time spent on each instrument. (Section 4.4.2.7)

Mostly, I improvise music using the child's musical responses, vocalisations and movements as guidelines; I might, for example repeat a note or rhythm used by a child and then expand, vary and extend the phrase before waiting for another response from the child. The child's music usually determines my style of improvising. I might base my melodies on snatches of melody previously enjoyed by the child, or I might pick up on the child's quiet or energetic mood. However, as well as being intent on establishing musical dialogues with the child I am also aware of the overall form of the music and will often insert 'predictable' rhythmic or melodic patterns into 'random' atonal exchanges in order to provide a sense of direction for our musical conversations.

At times, I insert well-known tunes into my playing or singing, either to see whether the child reacts to these familiar tunes or in order to regain the child's attention by playing a song I know they have reacted to in the past. Sometimes, children will request a certain tune again and again. At these times I might play the tune in a 'straightforward' way first but then improvise variations of the tune to see how far I can go from the original song before losing the child's interest. If the child's attention wanders I can always come back to the original tune. Even when children do not have an 'obvious' favourite song or tune, I find the 'theme and variations' structure very helpful in my improvisations. Its format provides a reassuring familiar structure I can come back to as well as giving me the freedom to 'wander' musically in whichever way is appropriate at the time.
Although, as I explained earlier, I take my musical 'cues' from the child, I do also try to introduce a variety of styles, rhythms and dynamics into the playing, as I have found that children are often captivated by changes in the music. In addition, children do not always react in 'predictable' ways. For example: the very noisy child may show great sensitivity

to a very quiet tune on the recorder, or the very quiet child might be delighted by huge cymbal crashes.

My improvisations aim to pick up and develop the child's musical contributions so that we can have constructive musical dialogues. I try to improvise in styles that will suit each individual child and parent best. Nevertheless, my own musical ideas, preferences and limitations also influence the way in which I play. On the piano, I often find myself playing simple IV, V, I type chord structures, probably as a result of playing variations of children's nursery rhymes. I also use a lot of modal and folk tunes, using a flattened 7^{th}, in the Dorian Mode. This might be because there are a lot of children's folk tunes in the Dorian Mode and because I find it easy to improvise in this mode. I frequently play in D minor or C minor, possibly because originally my right hand gravitated towards middle C, and my fingers have become used to the physical shapes of the chords in these keys.

On the clarinet, I often play in A minor, which in reality is G minor as the clarinet is a transposing instrument in B flat. This is because the reed horns that I have are pitched at G and C, and as I often offer these reed horns to children and parents while I'm playing the clarinet, I have become accustomed to improvising in this key. Quite often, I might be moving around the room while I play, so my phrases might be quite long and flowing with no predictable rhythms to accommodate the child's unpredictable movements. At other times I use quite jazzy styles and rhythms as the clarinet is well suited to this style.

In addition, I find that I am influenced by many outside factors in my improvisations. If I have been practising a particular piece of chamber music, snippets of phrases will appear in my improvisations. If I have been working on technical aspects such as producing very high notes on the clarinet, I will find that high notes are inserted in unexpected places. If I am moved by a piece of music I hear on the way to work in the car, a tune from that piece might find its way into my improvisations.

1.6.6: Single line instruments

It will be clear from the above, that I use my clarinet in most of my music therapy sessions. There are a number of reasons why I think that single lined instruments (and in my case the clarinet) are invaluable in my work:

- When I'm playing the clarinet I can be *mobile*. I can crouch down on the ground and be near a child lying on the floor, or I can follow a child who is moving around the room.

- This mobility also allows me to be *playful* and hide as I'm playing, setting up peek-a-boo games or inviting a mother to come and play with her child.

- Playing the clarinet allows me to have *direct eye contact* with the child, which is more difficult when playing the piano.

- The fact that I can *vary the dynamics and the pitches of individual notes* that I play on the clarinet means that I can change the tone colour of my playing and more easily gain a child's attention.

- The fact that *I can alternate between playing the clarinet and singing* means that children and parents will often be encouraged to vocalise themselves. The fluctuations in tone colour on the clarinet can then lead to the child varying his or her own vocal sounds in response to my playing.

- *The single melody line* on the clarinet can easily incorporate two pitches played by a mother and a child on reed horns or chime bars. The child and the mother will still be able to hear 'where they are' in the playing while at the same time feeling part of a musical ensemble.

- *The physical shape of the instrument* can provide a link between the child and myself, with the child holding on to the bell of the instrument. This is a more direct

and intimate link than when the child feels the vibrations of the piano that we might both be playing.

- Perhaps the most important reason for using the clarinet in my sessions is that it is *my first instrument*, which I love and feel a great affinity for. I am more likely to be able to communicate effectively with this instrument than on any other.

In a paper I gave at the 2002 World Conference of Music Therapy in Oxford, I explored the use of single lined instruments further by using a number of different case studies. (Oldfield 2002 b).

I will explore many other aspects of my work as a music therapist, which are more specific to my work with children with autism at the Child Development Centre and at the Croft Unit for child and Family Psychiatry, in Chapter 3. Inevitably, there are many overlaps between this section in Chapter 1 and Chapter 3. The general points I make in Chapter 1 are also relevant to my work with children with autism, and many of the 'characteristic' features of my work with children with autism in Chapter 3 are also sometimes applicable to children who do not have a diagnoses of autism. Nevertheless, I feel that the features of my work described in Chapter 3 characterise this work sufficiently to form a methodology for working in these two specific areas and this is why I have covered these points separately in Chapter 3.

I will now describe two brief case studies, which in many ways were the reason why I felt that these two specific areas of music therapy were worth developing and researching. I also feel that it is useful to include some case-work here in order to remind the reader that the clinical practice is where all my thinking and investigations originally stem from. In both these vignettes, I have changed the names of the children and the parents.

1.6.7: CDC vignette (Anna and John)

This case has been described in two articles (Jones and Oldfield 1999, and Oldfield 2001) and is included in the training video I have made about children with autistic spectrum disorder ('Mathew' in Oldfield, Nudds and Macdonald 1999). I will use information from both these articles and the training video in the following account.

John was diagnosed with autistic spectrum disorder at two and a half years old. Shortly after he was diagnosed he was referred to me by the paediatrician at the Child Development Centre. His mother, Anna, had noticed that he would calm down when recorded music was played to him and at times seemed to try and 'join in' by moving and vocalising.

In his two initial assessment sessions, I saw John with his mother as he was clearly not happy to separate from her. During these two sessions, John resisted any offers of instruments from me, pushing or throwing anything offered away. If I persisted he quickly became very angry, screaming and crying loudly. However, he did seem to listen to the music I played to him, and was particularly responsive to dynamic or rhythmic changes, or when the music suddenly stopped or started. He was also very physically active, rapidly moving from one thing to another.

In spite of his resistance to my suggestions, I felt he was very responsive and sensitive to music and that it would therefore be worth offering him some regular music therapy sessions. When I consulted his mother about what she felt were the most important areas to work on, she immediately said "speech and communication" and we also agreed that he needed help with concentration and with accepting adult direction.

In his third session, I did attempt to see him without his mother. But this was a disaster, with John screaming in a very distressed way, and his mother very anxious outside listening to his cries, so I invited her to come back in with him after no more than ten minutes.

During the first four months I established a clear structure to the sessions, with familiar 'Hello' and 'Good bye' songs which were repeated on the same instruments in the same part of the room every week. In between these two points I consciously alternated between encouraging John to do something with us (such as, playing the xylophone on the mat or running around playing large percussion instruments), and allowing John to do whatever he wanted while I accompanied his movements and actions by singing or playing other instruments. I have explored this idea of balancing 'following' and 'initiating' with a number of different clients in a previous article. (Oldfield 1995).

I was also particularly careful to pick up on John's many vocal sounds, imitate them, answer them and weave them into the musical improvisations. In addition I would often sing or chant commentaries to go with what John was doing at the time: "John is playing the drum" or "John and Mummy are having a cuddle".

Three weeks after our work began this is what Anna, John's mother, wrote:

> …while John and I were travelling home in the car after a music therapy session, John started saying 'Muma' repeating the word *Mummy* I had just said to him in the same way that we had been repeating vocal sounds to one another in the music therapy session we had just had. I remember the feeling of sheer joy and total disbelief. My son had said a word, something I thought would never happen I cried as I repeated the word *Mummy* over and over, the first word he had ever said. I was convinced from that moment that music therapy had given my son the pathway to speech (Jones and Oldfield 1999, p.168).

Initially, John responded very well to the clear structure of the sessions where I alternated between providing some direction and allowing myself to be led by him. However, after about four months, John became more and more resistant to being directed in any way and would fight and struggle fiercely when his Mum tried to hold him on her lap even for 1 minute. After a couple of very stressful sessions we decided to stop being directive in any way if John started resisting or fighting our suggestions.

Three or four sessions later, John surprised us. He had clearly become used to the 'on/off' approach, and when we stopped providing this structure, he found his own way to have time out and then rejoin us. When he felt he had had enough of interacting with us, he would disappear into a little playhouse behind some screens in a corner of the room. After a few minutes, he would return, quite happy to sit and play with us on the carpet with the instruments for a few minutes before disappearing again. Each time he retreated behind the screen, he would say "bye-bye" and then greet us again excitedly as he reappeared. I would leave silences while John was 'invisible' but respond to any small vocal sounds he made. Gradually John came to anticipate and enjoy these 'blind' vocal exchanges, usually bursting into fits of laughter before re-emerging with loud hellos. At home, John repeated these games, hiding behind the furniture and rushing out yelling "see ya" at the top of his voice.

As sessions progressed, John spent less and less time behind the screen. Occasionally, when we felt that he was beginning to be frustrated or upset, his mother or I would suggest that he might like some 'time out' by saying "bye-bye" and pointing to the screen. Sometimes this worked well and allowed John to retreat for a minute or two without getting too distressed.

During his last few months of music therapy sessions with me and his mother, John seemed more relaxed, having fully understood the structure of the sessions, and feeling he had some control over the situation. He would often choose instruments for his mother and me to play and particularly enjoyed making full use of the dynamic range of the instruments by playing soft music to 'put us to sleep' and loud crashes on the cymbal to 'wake us up'. His games were always incredibly intense and engaging and it was impossible not to be completely engrossed in his interactions.

John made a great deal of progress during his two years of individual music therapy sessions with me and his mother. From saying no words he ended up using three or four word sentences. Although he still found it hard to remain engaged in any one activity for very long, his concentration became more focussed and intense. He still enjoys being in

control, but can now be guided more easily and will get over 'upsets' much more quickly. Anna obviously thoroughly enjoyed being part of our work together. In our joint article she wrote:

> …..I remember thinking that it was a good thing that John hadn't wanted to stay in the room without me. It was a delight to be able to see John, who usually took no notice of anyone or anything for any length of time, become totally engrossed in making sounds and music. His enthusiasm and pleasure were so intense that it was impossible not to feel happy myself, especially when he started to share his enjoyment with me, bringing me instruments to look at or rushing up to me to give me an excited hug (Jones and Oldfield 1999, p.168).

Shortly after John and Anna finished their work with me, John started attending a school for children with special needs. In his second term at this school he took part in a music therapy group with a colleague of mine working at the school. Excerpts from a video of this group, filmed after he had been taking part in this group for a year, are included in the music therapy training video I mentioned earlier. (Oldfield, *et al* 1999). In this session, John is able to listen, take turns and generally conform socially while still enjoying the freedom of improvising and performing. Recently, I have heard that he has made so much progress that he has moved to a mainstream school where he is being supported by a classroom assistant.

For me, working with John and Anna was both fascinating and very rewarding. Writing a joint article with Anna about our work together provided me with great insight into how she had perceived our work together and convinced me that I should always aim to include mothers (or primary carers) in my individual music therapy sessions with children with autistic spectrum disorder.

The two articles I wrote about John and Anna as well as the fact that this case was included in my training video about children with autism, made me think and analyse the processes involved in this case. It was this case that made me begin to realise that there

were a number of aspects of this work that were specific to my approach with young children with autism. This is partly why I have set up an investigation in this area.

1.6.8: Croft vignette (Donald)

Donald was an eight year old boy with a previous diagnosis of Autistic Spectrum Disorder. He was referred to the Croft Children's Unit because of concerns regarding his hyperactivity and his stereotyped behaviours. His parents questioned his diagnosis of autism and wondered whether he would benefit from some medication.

During his first two weeks at the Unit, Donald was quiet and compliant, slightly slow in the classroom and quite solitary in his play. He did not appear to be hyperactive and although some staff had heard him mutter words under his breath, he had not shown any stereotyped behaviours.

In his two individual music therapy diagnostic assessments, he came into the room quite quietly, but then clearly enjoyed the greeting song I sung to him, smiling at me and showing no sign of embarrassment. During our initial instrumental improvisations, he remained softly spoken but was clear about what he wanted to play even though he was also quite happy to comply with my suggestions.

As he became more involved in the playing he seemed to 'loosen up' physically, and gradually played in a more spontaneous way, using a wider range of dynamics. However, it was during our improvised stories where we made up a story together while accompanying ourselves on a range of percussion instruments and the piano, that Donald really changed.

In our second music therapy diagnostic assessment, after a few initial verbal and instrumental prompts from me, he completely took over the story, with me simply echoing phrases back to him and occasionally asking him a question. As he was telling the story, he became more and more excited, shouting and laughing as he was speaking

so it was sometimes difficult to understand him. His story was about a boy who was very naughty and kept smashing plates. (Each time a plate was smashed, this would be accompanied by a cymbal crash). His mother was very cross and locked him in his room. The boy would escape only to smash another plate and be locked up again. The boy then smashed the television and turned the electricity off. Dad joined Mum in being very cross and the boy was locked up in his bedroom and the key was thrown away. The boy escaped once again and as we started another round of smashing plates I suggested that the story might need to have an ending. Eventually Donald brought the tale to a close with Father Christmas appearing at the boy's house.

In this story and in some of our musical dialogues together, Donald was very engaged and expressive. He showed that he was able to tell a coherent story and incorporate my suggestions. However, there were definite repetitive and stereotyped aspects to this story and I was quite disturbed by the excitement he was showing when describing violence.

The thing that was so striking about Donald's behaviour in the music therapy diagnostic assessments was that he was showing me aspects of his behaviour he had not shown in any other setting on the Unit. During our weekly management meetings, I showed the staff team video excerpts of our two sessions together, (having received Donald's permission to do so). The team were really surprised to see such spontaneous and excited behaviour in a child who so far had appeared generally quiet and passive. They were also concerned about his interest in, and excitement about, violence. Subsequent investigations revealed that he had witnessed violent behaviour at home. As a result, it was felt that some of his difficult behaviours were caused by social factors. He was now felt only to be borderline autistic spectrum disorder.

Donald's case was memorable because the video of our improvised musical story together so clearly showed a very different child to the one everyone else in the Unit had seen. However, I very often have something 'different' to say from the rest of the team about the children I have seen. This is why I felt that music therapy diagnostic assessments were providing new and valuable information to the team, and were worthy

of further investigation. I decided to focus on children who were being assessed for autistic spectrum disorder, partly because these children often seemed to be the ones where I 'disagreed' most with the rest of the team, and partly because I felt it would be possible to compare my MTDAs (Music Therapy Diagnostic Assessments) with the ADOS (Autistic Diagnostic Observation Schedule) that was being used in the Unit.

1.7: Conclusion

In this chapter, I have tried to 'set the scene' by outlining my project, describing the methodology used, defining autism and introducing the reader to my music therapy approach. I concluded this last section with two brief case studies, which illustrate why I chose to investigate pre-school children and their parents, and music therapy diagnostic assessments.

In the next chapter I examine the literature relevant to these two areas.

Chapter 2 :: Review of the literature

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2.6: Summary / Reflections on this literature review

2.1 Introduction

In this literature review I was interested in finding out about the work of other music therapists involved with children with autistic spectrum disorder. I was specifically interested in any guidelines, approaches or methodologies that might have been suggested and whether any research had been carried out in this field.

Because of my particular interest in working jointly with pre-school children with autistic spectrum disorder and their parents, I wanted to investigate any music therapy work involving working with parents and young children. I also looked at some of the literature that highlighted the connections that might have been made between pre-verbal exchanges and musical dialogues, as the parallels between these two forms of communication seem to be very important in my clinical work.

I also wanted to find out whether other music therapists had been involved in the diagnostic process with clients, particularly of course music therapists working with children with autistic spectrum disorder.

As the characteristics of my particular approach were emerging, it was becoming clear that I played the clarinet and moved about a lot during music therapy sessions. I therefore wanted to investigate whether other music therapists had written about the use of movement, and the use of single line instruments.

The focus of this literature review was on how my music therapy approach in the two areas I was investigating overlapped with, and differed from, other clinicians' work. This

literature review was not an academic overview of all the writing relevant to music therapy with children on the autistic spectrum. For this reason I used a more personal style than is usually used in academic literature reviews.

Although Chapter 2 will cover the bulk of the texts I referred to during this investigation, some articles, particularly those referring to autistic spectrum disorder in general and literature regarding music therapy research methodology, have already been mentioned in Chapter 1 of this thesis.

I followed various procedures to carry out this literature review and these are listed in Appendix 2.1.

2.2 Literature on music therapy and children with autistic spectrum disorder

2.2.1 Descriptive articles

Children with autistic spectrum disorder experience difficulties communicating. Even though music therapists use a wide range of approaches, nearly all music therapists agree that music therapy can provide the client with some form of communication. It is therefore not surprising that many music therapists have worked very successfully with children with autistic spectrum disorder and that there is a relatively wide range of literature on this subject.

Euper (1968) wrote that many authors had observed that children with autistic spectrum disorder showed an unusual interest or ability in music. She gave examples of various exceptionally musically talented people with autistic spectrum disorder and cited a study where only one out of thirty children with autistic spectrum disorder did not show a deep interest in music, (Bergman and Escola 1949, cited by Euper 1968, p.185). In my own clinical experience, I have often noticed how musically engaged children with autistic spectrum disorder were and what a musically satisfying experience it was for me to

improvise with them. Only two out of around forty children with autistic spectrum disorder that have been referred to music therapy in the past five years have not responded to treatment.

2.2.1.1 General texts

One of the first books to be written about music therapy in Great Britain described Alvin's work with children with autistic spectrum disorder in the fifties and sixties, (Alvin 1968). This book consisted mainly of case studies, but Alvin also made some general comments about her work with this client group. These comments were very informative but tended to be general observations rather than a methodology as such. For example, she mentioned how it was important to keep some elements of the room she worked in consistent and similar and how many of the children she worked with had an interest in the physical vibrations of the musical instruments rather than simply in the sounds themselves.

In their book 'Therapy in music for handicapped children', Nordoff and Robbins included a chapter entitled: "Music therapy and personality change in autistic children". (Nordoff and Robbins 1971). The whole book described the Nordoff and Robbins music therapy approach which in itself consisted of a methodology which was applicable to the work they described with children on the autistic spectrum. There is not room in this thesis to describe the Nordoff and Robbins approach in detail. However, a key point is that as Wigram *et al* (2002 b, p.127) wrote in the their description of the Nordoff-Robbins Model: "….their approach comes within the conceptual framework of *Music as Therapy*, where the music provides the therapeutic catalyst through which change will take place. Music occurs almost throughout the session, and the therapeutic relationship is formed *in* the music." When referring to children with autistic spectrum disorder, Nordoff and Robbins (1977) used detailed case studies to make a few points about specific music therapy approaches to children with autistic spectrum disorder. One of these case studies will be referred to in the next section.

Like Alvin, they mentioned that with the more active children, the therapy proceeded through a certain sequence of stages. In the first stage, the child overcame initial fears and realised that the music therapy experience was a positive one. In the next stage specific musical activities were discovered and explored, and in the final stage, the child was able to become self expressive. Alvin also talked about three developmental phases: in the first phase the child related mainly to objects, in the second phase the child related to itself and the therapist and in the third phase the child was able to relate to other significant people in their lives. (Alvin 1991).

Weber C (1991) wrote a general article about music therapy as a therapeutic possibility for children with autistic spectrum disorder. She referred to various books by music therapists including those by Alvin (ibid) and Nordoff and Robbins (1971) and then described a case study of a six-year-old girl with autistic spectrum disorder who made considerable progress through her music therapy sessions. Although this was a very general article it was of particular interest as it appeared in an Arts Therapy Journal rather than a music therapy journal, and showed that the interest in music therapy for children with autistic spectrum disorder was spreading to other disciplines.

Toigo (1992) wrote an article where she sought to integrate the insights of Dr. Temple Grandin who was diagnosed as having autistic spectrum disorder as a child, with current music therapy practice. The fact that music was both pleasurable and predictable was highlighted as being important.

Although Gembris (1995) did not write specifically about music therapy for children with autistic spectrum disorder, he made an interesting point that the development of musical skills in young children may not be related to other developmental skills. This would explain why many children with autistic spectrum disorder who are also developmentally delayed may, have quite sophisticated musical skills or be particularly responsive to various types of music making.

Links between these texts and my work

Alvin's (1968) comments about keeping the set up of the room consistent and the children's interest in the physical aspect of the musical instruments, are similar to some of the suggestions I make about working with children with autistic spectrum disorder in Chapter 3.

In my work with children with autistic spectrum disorder, I recognise some of the stages and phases described by Nordoff and Robbins and Alvin. However, I have not found that the stages are applicable to all children with autistic spectrum disorder or that the children clearly move from one phase to the next. The children often seem to fluctuate from one stage to another within sessions and may show several characteristics from different phases simultaneously.

Toigo's (1992) article ties in very clearly with the importance of motivation and structure, which I go into in more detail in Chapter 3. It was also interesting to note that Grandin felt that she could not follow the rhythmic 'give and take' of conversation and found it extremely difficult to synchronize her rhythms with a musical accompaniment. In the Musical Therapy Diagnostic Assessments that I use in this research project a lot of the focus is on looking at how communicative children can be in non-verbal musical dialogues.

I will now go on to explore a wide range of case studies written by music therapists from different backgrounds with varying approaches to their work.

2.2.1.2 Case studies

Mahlberg (1973) wrote a case study reporting how music therapy had successfully increased the concentration span and non-verbal communication techniques of a six-year-old boy with autistic spectrum disorder. Clapping activities and nursery rhymes played an important part in the sessions.

Unlike Mahlberg, the Nordoff and Robbins (1977) case study of Edward described mainly improvised musical responses on the piano to this child's vocalisations and physical movements. Edward's vocalisations gradually became more sustained, rhythmic and melodic. Nordoff and Robbins wrote:

> When he expressed these vocalisations in a musical setting they became subjected to musical organization: to scale structure, which ordered them in tonal relation with key, melody, and harmony, and to rhythmic form and tempo continuity, which stabilized them. This must have objectified them for him to a definite extent, for they acquired, through the musical forms they took in the musical context into which he directed them, a greater communicative-expressive significance than they could have as random, impulsive utterances. (Nordoff and Robbins, 1977, p.33)

Birkeback and Winter (1985) used two case studies to illustrate the 'forced' and 'illusive' nature of the children's playing. They used the Nordoff and Robbins assessment scales (described in more detail in section 2.4.1) to show that one of the children went through period of 'regression' at regular intervals.

Gustorff and Neugebauer (1988) as well as Mengedoht (1988) wrote detailed diaries of their work with individual children with autistic spectrum disorder. In both cases the relationships that developed through music making were very intense and central to the progress that the children were able to make.

More recently, music therapists in the UK have written detailed case studies which show how much children receiving weekly individual music therapy sessions have benefited from the work, (Howat 1995, Storey 1998, Woodward 1999, Warwick 2001 and Bailey 2001).

Howat and Woodward each described one case study in great depth rather than attempting to give general suggestions to music therapists working with children with autistic spectrum disorder. (Howart 1995 and Woodward 1999). Nevertheless they both

emphasised the importance of the emotional experience of the child with autistic spectrum disorder in music therapy sessions, implying that this could be one of the main areas that music therapists working with this client group should pay special attention to. In Warwick's (2001) case study, she felt that it was very important that the little boy she was working with could express feelings about his situation at home during music therapy sessions. However, Warwick also focuses very strongly on helping him to enjoy interacting with another person and developing his non-verbal communication skills.

Storey (1998) and Bailey (2001) both included two detailed case studies in their MA theses. Storey did not describe a specific music therapy methodology although her approach evolved to fit into a special school setting. (Storey 1998). Bailey focused particularly on the issues of negotiating control and facilitating empowerment in her work with children with autistic spectrum disorder.

Links between these texts and my work

Many of the children I have worked with have made progress in similar areas as those outlined by Mahlberg (1973) and I have often used 'clapping' and a wide variety of children's songs.

The case of Edward described by Nordoff and Robbins (1977) is relevant to my work with children on the autistic spectrum because I also often improvise musically around the children's vocal sounds. However, my musical responses are less often played on the piano and could be vocal, played on percussion, or played on the clarinet. Although like Nordoff and Robbins, I believe that the music provides a framework which allows the child to become more communicative, I do not feel it is necessary to transcribe each session and subject it to musical analysis. In my work, I have found that it is usually sufficient to briefly write down a special rhythm or interval sequence that seemed of particular significance in the interactive process.

Like Birkeback and Winter (1985) I have noticed periods of withdrawal or opposition in my work with children with autistic spectrum disorder. Like Gustorff and Neugebauer (1988) and Mengedoht (1988) I find that I usually feel very intensely involved with the children and the parents that I work with. It could be that this intensity comes partly from the detailed analysis of audio-tapes that these music therapists undertake of their sessions in the Nordoff and Robbins tradition. In my case the analysis of the audio-tapes is replaced by detailed observations of the videotapes of the sessions.

Some of Storey (1998), Woodward (1999) and Bailey (2001) work may have been influenced by my clinical approach as they trained on the Anglia Polytechnic University music therapy MA training course where I am a part-time lecturer, and I supervised Storey's and Bailey's MA theses. However, part of my teaching philosophy is to encourage students to develop their own styles of work and approaches.

In a similar way to Warwick's (2001) case, for some of the children in my research project music therapy provided an important opportunity to express a variety of emotions. For others, however, the central focus was on establishing some basic forms of interaction and communication.

Like Bailey (2001), I have also found the issue of control to be central to my work. The structure that Bailey suggests for her music therapy sessions has some similarities with the methodology I will describe later.

Having explored the general texts, I will now explore the more focussed approaches.

2.2.1.3 Focussed approaches

Nelson *et al* (1984) suggested that music therapists working with children with autistic spectrum disorder should consider specific areas of strengths and weaknesses for each child when planning the music therapy 'programme'. These areas were: history and responsiveness to therapy; responses to sensory stimuli; concentration; ability to cope

with change; temporal perception; rhythmic movement; language; communication and affect.

Lecourt, Kim and Levinge wrote detailed case studies of their work with children with autistic spectrum disorder using psychoanalytic and psychodynamic approaches, (Lecourt 1991, Kim 1996 and Levinge 1990). All three of them focussed on analysing and interpreting the meanings of the children's behaviours. In the music therapy sessions they used very loose structures, mainly responding and reflecting back to the children musically rather than making many musical suggestions themselves. Lecourt also described how she recorded the child's musical responses and played them back to the child. (Lecourt 1991).

Other music therapists such as Brown and Robarts, have offered possible explanations regarding why music therapy may be particularly effective for children with autistic spectrum disorder. (Brown 1994, and Robarts 1996). Some of these explanations do have direct implications on the approaches that music therapists might have. For example, Robarts explained why musical improvisation was particularly good at addressing avoidance behaviours and how the music therapist had to maintain a balance between "familiar" and "novel" approaches, (Robarts 1996, p.179). Brown (1994) suggested that the fact that musical improvisations could fluctuate between fixed organisation and creativity was one of the reasons why music therapy was particularly useful when working with children with autistic spectrum disorder. Both Robarts and Brown indicate that the intrinsic properties of music itself such as the structure and organisation within music and the dissonance and dynamics in music, enable music therapists to address the particular needs of children on the autistic spectrum.

In a later case study of a two year piece of work with a five-year-old boy with autistic spectrum disorder, Brown (2002, p.84) described how the changes in different musical elements within the music therapy improvisations helped a little boy work through his extreme need to control every aspect of his environment.

Schumacher (1991 and 1994) talked about two stages when working as a music therapist with children with autistic spectrum disorder. In the first instance she established 'contact' with the child by putting the child's spontaneous movements, vocalisations and percussion playing into a musical context. She then established 'communication' through engaging in a form of playful exchange. Later, she talked about the importance of balancing "nearness" and "distance". In another article Schumacher and Calvet-Kruppa (1999) broke down the development of pre-verbal communication in children with autism into seven different stages. These stages ranged from "no attempts at communication" to the child who could express an emotion and share it with another person. There are some similarities here to the Nordoff and Robbins (1977) rating scales which I mention later on in this Chapter in section 2.3.1.

Schumacher also wrote about the importance of musical games and rhymes in her work with children with autistic spectrum disorder (Schumacher and Calvet-Kruppa 1999). The speech therapist, Prevener (2000) developed an approach called 'Musical Interaction Therapy' which she found very successful for mothers and young children with autistic spectrum disorder. This was largely based on songs and rhymes that were sung, acted and improvised around in very flexible ways

Tyler and Di Franco both explored case studies with children with autistic spectrum disorder using particular frames of reference. (Tyler 1998 and Di Franco 1999). Tyler showed parallels between Laing and Winnicotts ideas about the 'true and false self' and the Nordoff and Robbins ideas of the 'awakened and unawakened' music child. She explained how having both these concepts in mind helped her understanding of the therapeutic process, (Tyler 1998).

Di Franco (1999) described an approach involving three stages: 1) sound anamnesis (assessment); 2) Observation; 3) Clinical evaluation. At each stage he filled in complex forms asking very detailed questions about the musical and communicative behaviours of the child. I was reminded of Edith Boxhill's evaluation forms that she used with learning disabled clients (Boxhill 1995).

Benenzon (1982) described a detailed music therapy approach with emotionally disturbed children, some of whom were on the autistic spectrum. The therapist used a wide range of sounds, recordings and percussion instruments and often provided the opportunity for the child to play with water. In the initial period of treatment the therapist had to find 'the intermediary instrument' specific to that child which enabled the child to interact with the therapist. Benenzon also described treatment where he worked closely with the parents, sometimes using recordings of the parents' voices and sometimes having the parents in the room with the child.

Mahns (1988) wrote an overview of the different approaches music therapists might have when working with children with autistic spectrum disorder. To some extent these approaches were influenced by what the therapists believed caused autistic spectrum disorder. For example, in Benenzon's (1982) work some aspects of the child were considered to be 'unborn' and the music played matched the sounds a baby might hear in utero. However, Mahns (1988) concluded that most music therapists did not apply a specific theory to their work but were more likely to work through the music to adapt to the needs of each individual child.

Links between these texts and my work

Nelson *et al's* (1984) categories seem relevant to my work with children with autistic spectrum disorder, but I would suggest that not all the categories necessarily need to be examined for each child. For example, for some children 'responses to sensory stimuli' or 'rhythmic movement' would be very important to consider, whereas for others these two areas might not be of specific interest.

Like Lecourt (1991), I find that it is important to listen carefully to the child and to allow myself to be led and guided by what the child does. Nevertheless, I also find that it is important to provide some leadership and structure. This may be partly because my work is much shorter term than work described by music therapists with psychoanalytic

approaches and partly because I tend to work more clearly towards helping the child and the parent progress towards clearly identified objectives.

In 1995, I explored the idea of contrasting musical interventions similar to those suggested by Robarts (1996), Brown (1994) and Schuhmacher (1991 and 1994) when I wrote an article entitled 'The Balance Between Following and Initiating', (Oldfield 1995). This idea forms an important part of my suggested methodology and will be explored further in Chapter 3 and on the video.

Like Brown (2002) I think that the issue of control is central to much of my work with children on the autistic spectrum. In Chapter 3, in my description of what I feel are the 'key' reasons why music therapy is useful with children with autistic spectrum disorder, I list the fact that music therapy can address issues of control as one of eight important points.

Like Schumacher and Calvet-Kruppa (1999) and Prevener (2000), I find interactive musical games useful in my work.

Although neither of the two frames of reference outlined by Tyler (1988) and Di Franco (1999) underpin all of my work I have often felt that a child has presented me with a 'false' smile and I have wondered what was behind this mask. It is also useful to keep in mind that a new frame of reference can shed new light on the way in which a music therapist will view improvisations occurring in the sessions.

I have found Boxhill's (1995) and Di Franco's (1999) evaluation forms helpful to remind myself of the range of responses I should be aware of in the children that I work with. Nevertheless, the danger of completing forms that are so long and complex is that one becomes so concerned with the details of the behaviours one is looking out for, that one can no longer improvise freely and creatively.

Although Benenzon's (1982) approach is very different to mine, I find that as I am getting to know the child I often find a particular instrument, activity or musical phrase that enables me to engage with the child. In Benenzon's work with the parents there was a greater emphasis on showing the parent 'healthy' ways of interacting with the child rather than picking up on the positive sides of the parents interactions with the children.

2.2.1.4 Specific approaches

Ruyters and Goh (2002) developed a special approach in their work with children with autistic spectrum disorder where they made use of visual structure to help the child to be aware of the structure of the music therapy session.

Staum (2002) centred on the fact that many children with autistic spectrum disorder will sing words rather than speak them. She suggested that teachers could use songs with special words in their music classes to help the children to extend their vocabulary. Miller and Toca (1979) wrote about a case study where a three-year-old boy with autistic spectrum disorder was helped to acquire language through an adapted form of melodic intonation therapy.

Clarkson (1998) described case studies where she used 'guided imagery with music' (GIM) techniques with three youngsters with autistic spectrum disorder with whom she worked individually over a period of many years. The young people used facilitated communication to print their ideas on the computer and the music therapist was the person who guided the youngsters' hands onto the letters to form the words. This is an unusual approach with children with autistic spectrum disorder but one which was clearly successful, showing great sensitivity and respect for the needs of young people with autistic spectrum disorder.

Bryan (1989) was one of the few music therapists to have written about a music therapy group for children with autistic spectrum disorder. Her article explored how the group's music changed and gradually enabled the group to operate collectively. The methodology

she described was closely linked to processes occurring in the group as a whole. I have also recently written about the music therapy group at the Croft Children's Unit which usually includes some children with autism. (Carter and Oldfield 2002). In this PhD thesis, however, I will be focussing on individual work with children with autistic spectrum disorder.

Links between these texts and my work

Ruyters and Goh (2002) approach has some similarities to the structures that I use in my work. I have also found that making a clear ending to activities has helped the children to be less anxious and more independent.

In my work I have come across a number of children with autistic spectrum disorder who sing rather than speak and Staum's (2002) and Miller and Toca's (1979) observations reinforce my conviction that many forms of vocalisations and sung words and syllables should be creatively encouraged.

Although all my work is shorter term and less intense than Clarkson's (1998) approach, at the Croft Unit for Child and Family Psychiatry, I have often used music to enable children to relax, tell stories and allow their imagination to run free. Like Clarkson, I believe that we often underestimate the creative and imaginative capabilities of the children with autistic spectrum disorder that we work with.

2.2.1.5 Conclusion

All this literature indicates that music therapists are convinced of the value of music therapy for children with autistic spectrum disorder. Most music therapists base their observations on one or two detailed case studies and some have attempted to explain why music therapy is particularly effective with children with autistic spectrum disorder. A few give some suggestions regarding, frames of reference or approaches to this work, some of which overlap with the approaches that have evolved out of my clinical practice.

I have explored these approaches in a training video (Oldfield 1999) and in an article including two cases of work with pre-school children with autistic spectrum disorder and their mothers (Oldfield 2001). The approaches I use will be examined in more depth later in this thesis.

Evers (1992) conducted a survey to find out how well accepted music therapy was by paediatricians and child psychiatrists in the Federal Republic of Germany. Not surprisingly the willingness to refer a child to music therapy was related to the clinicians knowledge of music therapy and also to their own personal interest in music making and/or music listening. Overall, the statistics are encouraging showing that 14.5 % of the paediatricians and 56 % of the child psychiatrists who took part in the survey recommended music therapy as a form of treatment for children with autistic spectrum disorder. Nevertheless most of the clinicians also indicated that there was a need for more research in this area.

Although most of the literature on music therapy with children tends to be descriptive, a few music therapists have set up research projects in this field.

2.2.2 Music therapy research projects with children with autistic spectrum disorder

Smeijsters (2000) wrote an article about music therapy treatment for self-harming clients (children and adults) with learning disabilities and autistic spectrum disorder. He studied five music therapy research projects by different music therapists and concluded that in general music therapy was seen to be effective, but that the outcomes depended very much on the reasons behind the self-harming of the clients. He also suggested that although music therapy should be seen as a non-invasive approach which may not have the immediate results that more invasive approaches such as 'time out' or 'holding' might have, music therapy can be used directly to modify self-harming behaviours over longer periods of time. Smeijsters article is important because it looks in depth at a number of music therapy research projects to draw conclusions which have a direct effect on clinical practice.

As early as 1969, Stevens and Clark (1969) set up a research project looking at how relationships, communication skills and motivation improved in five children with autistic spectrum disorder receiving weekly individual music therapy sessions over a period of 18 weeks. Significant improvements were made but the authors felt that the rating scales they used were too imprecise to assess some of the more intricate behaviour changes.

Burday (1995) looked at whether 10 children with autistic spectrum disorder would learn signs and speech better if the words were taught with music rather than with a rhythm. Results were positive, indicating that music could help children with autistic spectrum disorder to learn.

Edgerton set up a research project where she looked at 10 children with autistic spectrum disorder between the ages of six and nine who had individual music therapy sessions, (Edgerton 1994). The purpose of this study was to examine the effects of improvisational music therapy upon the communicative behaviours of children with autistic spectrum disorder. She asked specific questions regarding numbers and types of communicative behaviours in the children as music therapy sessions progressed, as well as comparing the children's scores with ratings made by parents and teachers. To measure communicative behaviours she devised an original checklist (Checklist of Communicative Responses/Acts Score Sheet: CRASS) based on items from numerous rating scales and assessments for musical communicativeness, autistic spectrum disorder, and communication scales. Each of the sessions was videotaped and 10 minute intervals were randomly selected for analysis prior to each 30-minute session. Two observers independently viewed the ten minute excerpts, recording the communicative behaviours of each child, using the CRASS. She used a reversal design consisting of a) intervention, b) session 6, withdrawal on intervention and c) reintroduction of intervention. In session 6, withdrawal of intervention (b) consisted of playing and singing precomposed music as opposed to improvised music. She found that music therapy was effective in increasing autistic spectrum disordered children's communication over a period of ten weekly

individual sessions. She also found that communicative behaviours decreased in session 6 when the music therapist used pre-composed songs instead of improvised music.
When comparing four musical modalities (tempo, rhythm, structure/form and pitch) across the ten children, she noted that the tempo scores increased most, with rhythm second and structure and form third.
In 1986, Warwick teamed up with the research psychologist Muller to investigate ten children with autistic spectrum disorder receiving music therapy partly with their mothers and partly without their mothers (Warwick 1988 and 1995). It was hypothesised that music therapy would be shown to have positive effects on the children, that these positive effects would generalise to situations outside music therapy sessions and that the mothers' attitude towards the children would become more positive and facilitate the generalisation process. The ten children were divided into two groups, the first group received individual weekly music therapy sessions for a term without their mothers while the second group received treatment with their mothers. The groups then crossed over for a further term. Treatment occurred in the children's homes. The mothers were asked to play with their children for 15 minutes before and after each music therapy session. Warwick (1995) indicated that this investigation showed that the mothers' perceptions towards their children became more positive. She also suggested that the parents could be divided into three different groups, which I will discuss further in section 2.4.8.

Plahl undertook a detailed investigation where she studied 12 young multiply-disabled children between the ages of two and six years old (some of whom were on the autistic spectrum) each receiving ten music therapy sessions. (Plahl 2000). She hypothesised that the children would make progress in seven different areas: pre-verbal communication, concentration, communicative contributions, intentional communicative participation, communicative reactions, dialogues and communicative expression. She measured results by using detailed videoanalyses, (she developed her own video analysis form 'KAMUTHE'), music therapy reports, rating scales, psychological tests and parents interviews. The investigation showed that progress was achieved by the children in a number of different areas such as pre-verbal communication and concentration.

All of these investigations had positive outcomes and showed that music therapy was effective. Edgerton and Plahl used well-defined music therapy approaches in their research. Edgerton uses a Nordoff and Robbins approach and Plahl studies music therapists using the Orff approach. The successful outcome of their investigations confirms both Edgerton and Plahl's belief in the music therapy systems they were using, rather than prompting them to suggest new specific approaches with the children they had been studying. (Edgerton 1994 and Plahl 2000). Warwick, on the other hand, was 'testing' out new ways of working by including parents in the sessions and working in the children's homes, neither of which she had done before. Warwick concluded that working in this way was beneficial to families and children, but conceded that there were limitations for music therapists working in the client's' homes, such as lack of equipment and privacy (Warwick 1995).

In a very recent PhD research project Holck (2002) analysed in detail how different music therapists established contact with six children, some of whom had autistic spectrum disorder. She found that in the basic forms of non-verbal communication between the therapist and the child, an interaction theme specific to each child is built up around a core motive and is then repeated and varied. Unfortunately her PhD thesis was written in Danish and the information I have on this investigation is therefore limited to a short English summary and email conversations I have had with Holck.

Holck's description of her work seems similar to the way I would describe my initial process of establishing contact with children with autistic spectrum disorder. Like Holck I feel that this basic non-verbal interaction is very similar to mother-baby interactions.

Links between these texts and my work

Although Smeijsters (2000) work centres mainly on self-harming behaviours in adults and my work is with children with autistic spectrum disorder and their families, parallels do exist between our studies because I am also addressing issues that are directly relevant to my clinical practice.

Stevens and Clark's (1969) study is similar to mine in that single cases of comparable ages are studied over approximately the same amount of time. However, in my study I used an evaluation system geared towards each individual child which meant that I was able to evaluate each of the children's progress more precisely.
Like Edgerton (1994), I designed an assessment form specifically for the investigation in the Croft study. At the Child Development Centre, however, my investigation was somewhat different from Edgerton's research partly because the children at the Child Development Centre were younger and attended with their parents who took an active part in the research. In my study, each dyad was assessed individually rather than designing the equivalent of Edgerton's CRASS evaluation form to be used across all the children. In her study, she changed the nature of the music therapy intervention in session 6. In my investigation at the Child Development Centre I attempted to evaluate the music therapy practice over a longer period than Edgerton (20 sessions rather than 10 sessions) without modifying it in any way. Instead of using 10 minute time samples, each session for each case is analysed in great detail. In addition to this detailed video analysis, I also use structured interviews and questionnaires before and after the treatment. However, unlike Edgerton, I did not collect data from teachers or other therapists involved with the children.

Warwick's (1988 and 1995) research was similar to my Child Development Centre investigation because the parents were included in the investigation. The children also received a similar amount of therapy consisting of weekly sessions over a period of two terms. However, there were some major differences: in Warwick's work the parents were in the sessions for only half of the treatment sessions, and Warwick saw clients in their homes rather than in the clinic. The emphasis in Warwick's investigation is perhaps also more on how the parents can help the children rather than on the benefit the therapy can have on the parents' own general well-being.

Plahl's (2000) research project was similar to the one I undertook at the Child Development Centre in that both studies used a combination of video analyses,

interviews and questionnaires to evaluate the results. The investigations are different because the children I worked with all had autistic spectrum disorder, were seen for weekly sessions for six months rather than just for ten weeks, and were seen with their parents, who were also part of the investigation. In addition, Plahl was studying children seen by music theraspists other than herself and I have been investigating my own work. Holck's description of her work seems similar to the way I would describe my initial process of establishing contact with children with autistic spectrum disorder. Like Holck I feel that this basic non-verbal interaction is very similar to mother-baby interactions.

Having looked at the literature written by music therapists working with children with autistic spectrum disorder, I then explored the work of music therapists who were using music therapy primarily to aid diagnoses or assess clients' strengths and difficulties. Of course, my main interest was with children on the autistic spectrum, but as there was very little literature in this area, I decided to look at any literature on music therapy used for diagnostic purposes.

2.3 Literature on music therapy used for diagnostic purposes or for assessment

In 1971, Nordoff and Robbins wrote:

> The investigational possibilities of music therapy based on improvisation proved to be an aid in differential diagnosis. Comparative experiences made it possible to discern in some children responses that indicated not so much autism as aphasia or brain-injury complicated by emotional disturbance.

They then went on to describe a case study where the music therapists' initial diagnostic impressions were shown to have been correct (Nordoff and Robbins 1971, p.104). Nevertheless, Nordoff and Robbins did not suggest a specific music therapy approach for diagnostic purposes.

Although Nordoff and Robbins already commented on the potential of music therapy sessions as an aid to differential diagnosis in 1971, very little literature has been found in this field. However, some literature does exist on music therapy assessments where the

aim of the assessment may be to determine whether a client is suitable for music therapy treatment or whether the treatment has been effective. There is also some literature on short-term music therapy treatment. Both these areas sometimes overlap with diagnostic music therapy assessments. Although I do not think it is necessary to review all the work in these two fields, some of the literature that has common points with the diagnostic procedures outlined in this thesis will be explored now.

2.3.1 Music therapy assessments

In 1988, Isenberg-Grezda wrote a review of the music therapy literature on assessment. She concluded that music therapists think of assessment in their work in two ways. The first is part of each music therapist's practice and is an on-going evaluative assessment which consists initially in identifying whether a client will benefit from music therapy treatment, and later in determining the progress made by the client. The second is a diagnostic assessment and consists of comparing the results of music therapy assessments to other assessments and trying to determine what music therapy can offer or add to treatment that is different from other forms of intervention. My work at the Croft clearly comes into the second category described by Isenberg-Grzeda. However, in this literature review I will look at a wide range of work by music therapists on both evaluative assessment and diagnostic assessment. This is because the process of determining clinical progress in music therapy treatment is likely to inform and be relevant to the process of determining what is specific and unique to music therapy assessments.

In 1993, I wrote an overview of how different music therapists analyse their work and suggested a three stage assessment procedure which has since been used and adapted by other music therapists. (Oldfield 1993). This study shows that although there is no standardised assessment procedure for music therapists, there is an interest in the profession in developing more efficient ways of gathering information about music therapy sessions. This interest in thinking about what information music therapists gather about their clients is perhaps a first step in thinking about whether music therapists could

gather information about their clients in different and sometimes more effective ways than other diagnostic procedures.

It is interesting to note that Nordoff and Robbins developed their music therapy evaluation sheets from scales that were already being used by other staff to evaluate autistic spectrum children in a day care centre. (Nordoff and Robbins 1977, p.177 and 178). Scale 1, which was called 'Nature and degree of the Relationship to an Adult as a person', became the Nordoff and Robbins Scale 1: 'Child-Therapist Relationship in Musical Activity' and Scale 2, originally entitled 'Communication' became the Nordoff and Robbins Scale 2: 'Musical Communicativeness'. Unlike my Music Therapy Diagnostic Procedure and the ADOS (Autistic Diagnostic Observation Schedule) which will be elaborated on in greater depth at a later stage, the scales used in the day centre where Nordoff and Robbins worked, were used to evaluate progress made by the children at the centre rather than to diagnose autism. Nevertheless, in both cases the music therapy assessments concentrate on levels of engagement or resistance, and on levels of communicativeness through musical involvement. In both situations, the music therapists successfully adapted an assessment tool that was already in use in the clinical setting.

Wells (1988) described her individual music therapy assessment procedure for young adolescents attending an in-patient psychiatric Centre. Three musical tasks were described and their rationales clarified. Each task focused on different areas of assessment, such as level of anxiety, ability to make choices, self-image, attention span and ego boundaries. Assets (or areas of strength) and then "common musical/behavioural criteria indicators" were described. The primary purpose of this assessment procedure was to ascertain whether music therapy would be a suitable intervention for a client.

Grant (1995) and Boxhill (1985), two music therapists from the USA described detailed music therapy assessment procedures. They both argued that music therapists are in a strong position to evaluate the developmentally disabled clients' sensorimotor, perceptual, social and communication skills. The assessments asked large numbers of

very specific questions such as 'does the client play the resonator bell using mallet while moving horizontally across midline?' and took several sessions to be completed. These assessments measured the general abilities of clients, and could show progress or deterioration in very specific areas.

In the U.K., general levels of ability are usually routinely assessed by psychologists, occupational therapists and physiotherapists, who would each look at even more detailed areas in their own areas of expertise than are covered by Grant and Boxhill. The assessment procedures they described would be too detailed and lengthy for music therapists to use to assess their own work and only very small parts of the assessments would usually be relevant to individual music therapy clients. In addition, if music therapists attempted to fill in such lengthy and detailed questionnaires about all aspects of the client's development, they would have to completely change the nature of the music therapy sessions and set up test situations where the questions on the assessment forms could be answered. Filling in these types of detailed questionnaires would also detract from the process of 'developing a relationship with the client through spontaneous music-making' which tends to be one of the primary concerns of most music therapists working in the U.K.

Loewy (1999) and Rogers (1992) wrote about clinical music therapy situations where new information was revealed to the music therapist. Rogers described long-term individual work with children who had been sexually abused and who sometimes disclosed information in music therapy sessions that had not been shared with other professionals, (Rogers 1992). Loewy worked in a medical centre with chronically ill children and explained how new information about family themes would often be revealed through music therapy sessions. (Loewy 1999).

Another approach that some music therapists have taken to assessment is to analyse the music that comes out of music therapy sessions and compare musical output with other aspects of the client's strengths and difficulties. Dunachie, (1995), for example, was interested in determining whether musical developmental levels matched up with

cognitive developmental levels when working with learning disabled adults. Saperston, (1999) investigated how developmental singing abilities, object permanence and language development related to one another in young children and adults with learning difficulties. York (1999) developed a 'Residual Music Skills Test' to identify the musical skills of people with Altzheimer's Disease. Both Saperston and York subsequently used the assessments they had developed as a way of diagnosing the clients' general levels of ability. These three approaches are closer to diagnostic music therapy assessments.

Aldridge (1996) developed "musical elements of assessment" to help assess receptive and productive areas of functioning for Alzheimers patients. He also compared features of medical and musical assessments, adapting features of the medical tests to the music therapy situation. For example "motivation to complete tasks" could easily be assessed in the music therapy setting by looking at "motivation to sustain playing".

Links between these texts and my work

Although the data that Wells (1988) collected in her individual music therapy assessments was reviewed and interpreted, the emphasis was on assessment for music therapy treatment rather than on diagnostic indicators. Nevertheless, Wells lists the rationale for musical tasks in a similar way that I describe the 'purpose' of each activity in my sessions at the Croft.

Boxhill (1985) and Grant's (1995) music therapy assessments describe procedures that are very different from ongoing music therapy work. Although in my diagnostic music therapy sessions the aims of my work have to be different from when I am engaged in on-going music therapy treatment, the general approach I have is similar. For example: improvised, spontaneous music making remains at the centre of each session both in music therapy treatment sessions and in diagnostic assessments. In spite of all these differences between the Boxhill and Grant assessment forms and my diagnostic procedures, the core concept that music therapy approaches may be useful to evaluate client's strengths and difficulties remains similar in both situations.

The main difference between Loewy (1999) and Rogers' (1992) approach and the assessments I am carrying out at the Croft is that in their work new information is gathered incidentally as the therapeutic process evolves rather than being the primary focus of the work. However, their approach indicates that music therapy can reveal information not revealed in other disciplines or therapies.

The main difference between Dunachie (1995), Saperston (1999) and York's (1999) approaches and mine is that they were measuring musical ability rather than looking at the communication processes that came out of musical improvisations. Because they were focussing on musical ability they had to develop specific musical tests. In a similar way to the assessments mentioned earlier by Boxhill and Grant, the administration of these tests were very different from music therapy sessions, whereas my diagnostic assessments remain very similar to music therapy sessions.

Although Aldridge (1996) was working with a very different client group (Alzheimers patients), the idea of answering questions about levels of ability in the music therapy sessions is not dissimilar to the music therapy assessment investigation I have undertaken in this project.

I will now examine short-term music therapy which has some points in common with both music therapy assessments and music therapy used for diagnostic purposes.

2.3.2 Short term music therapy work

Only a small number of music therapists have written about music therapy used for short-term work. Traditionally, music therapy is seen as a slow process which occurs over months if not years. Indeed the Association of Professional Music Therapists defines music therapy by saying that "music therapy involves a relationship between the therapist and client in which music becomes a way of promoting change and growth", (APMT

1997). The development of a relationship in which change and growth can occur clearly pre-supposes that the work usually goes on for some time.

Nevertheless, a number of music therapists such as Bunt *et al* (1987), Edwards (1999) and Griessmeier (1994) have written about short-term interventions.

Bunt *et al* (1987) described an eight week group for adults in a general hospital's psychiatric unit. They listed various aspects of the work which they felt were unique to music therapy. These included: "co-operation within the group. All efforts of equal value" and "ability to get used to doing something for fun and enjoyment"(Bunt et al, 1987, p.25).

Edwards (1999) and Griessmeier (1994) both worked with children in general hospitals. They both particularly emphasised the importance of working with the hospital team, and the fact that the music therapist must have a very flexible approach. It could be argued that short-term music therapy has the capacity to be particularly adaptable and varied, lending itself well to children with acute medical needs.

Froehlich (1984) was able to demonstrate that music therapy was more effective than play therapy in facilitating the verbalisation of hospital experiences and feelings. The children in this study only had 'one-off' music therapy and play sessions which is similar to the diagnostic study in this project.

Molyneux described her work at a unit for child and family psychiatry, where a series of fixed-term employment contracts forced her to examine the value of short-term music therapy treatment. (Molyneux 2001). She made interesting parallels between short-term music therapy work in child and family psychiatry and Daniel Stern's 'serial brief treatment'. (Stern 1995). In both cases, parents and children were treated together and the emphasis was on supporting the mother and creating a positive, non-judgemental environment. She then went on to draw out three points that she felt were features of a short-term approach to music therapy. These were:

- a positive therapeutic alliance
- an active stance of the therapist to engage the client
- containment and structure/attention to therapeutic aims

In a recent research project into short term music therapy with mothers and young children I was able to show how parents and children were highly engaged and involved in a small number of both play and music therapy sessions. The project also showed that parents could gain a better understanding of their own relationship with their child by viewing video sessions of 'one off' music therapy sessions, (Oldfield and Bunce 2001). The success of these 'one off' sessions shows that music therapy can have an impact even in a very short space of time. Clients, (as well as the staff working with clients) can gain new insights into their strengths and weaknesses from single music therapy sessions.

Links between these texts and my work

Although Bunt *et al's* (1987) work with adults is bound to be very different to the approach with children, it is interesting to note that some aspects of the work which the authors feel are unique to music therapy overlap with my views about why music therapy is useful as an aid to diagnosis. For example, the fact that both the music therapist and the child are involved in an 'equal' way in the creation of a common musical improvisation and the fact that the child can do something for 'fun and enjoyment' are similar to Bunt *et al's* points.

The medical setting that Edwards (1999) and Griessmeier (1994) worked in was very different from that of a Child and Family Psychiatric Unit. Nevertheless, the importance of working with the team and being very flexible is similar to the work at the Croft where I often have to change times or approaches at the last minute to fit in with special circumstances.

Molyneux's (2001) work has many points in common with my approach and I will refer to her work on diagnostic assessments in the next section.

All the short-term music therapy described here shows that music therapy can have an important impact, even in a reduced amount of time. There is some evidence that music therapy is particularly well-suited to address immediate short-term difficulties and to adapt to unexpected situations. Some of this work also suggests that new ideas or thoughts can come out of short-term approaches, indicating that music therapists might be able to gain information about clients that could contribute to diagnostic information.

2.3.3 Music therapy diagnostic assessments

Wigram (1995) outlined his music therapist assessment work at Harper House where children are diagnosed with a wide variety of conditions such as Rett Syndrome, autism and language disorders. He explained that he looked at the way the child responded by asking specific questions under five different headings: general interaction and response, abnormal communication behaviour, musical behaviour, transference of behaviours, or features of pathology into musical behaviour interaction and physical activity and behaviour. He also described a list of approaches and ideas that he used in the sessions.

A few years later, Wigram (1999 and 2000) described the model of a structure to his assessment sessions. Wigram's used Improvisation Assessment Profiles (IAP), which were adapted from Bruscia's IAPs (Bruscia 1987). From Brusia's six Profiles, Wigram chose the profiles of Autonomy and Variability. Wigram wrote:

> These two profiles are useful in differentiating between children who have autism or some other variant of pervasive development disorder or communication disorder. Autonomy helps one look closely at the interpersonal events that are going on, particularly the readiness of children to work together with me, take turns, share and act as a partner, or their propensity for resisting suggestions or becoming extremely dependent and reliant. Variability can illustrate at a an inter- and intramusical level the child's capacity for creativity, or evidence of a child's rigid or repetitive way of playing that might support a diagnosis on the autistic

continuum (Wigram 2000, p.82).

He explained that he watched the video tapes of each of his assessment sessions and chose selected musical excerpts to analyse in depth. He would then select the elements of the scale (for example timbre, volume and tempo) that he wanted to focus on and write them in under each gradient of the two different profiles. He used five different levels of scoring, ranging of one extreme to the other. Using this system, Wigram was able to show how the musical analysis of a child's improvised playing reinforced his opinion that the child had a language disorder rather than being on the autistic spectrum.

In Wigram's most recent article on music therapy assessment, (Wigram 2002), he showed a table of an individual child's responses and reactions in music therapy and how these responses related to what he called 'the expectations of therapy' (p.16).

Molyneux (2001), used similar music therapy diagnostic assessments to the ones I use at the Croft and described three different assessments where she was able to contribute to the team's evaluations of the children's diagnoses. Molyneux's work is very similar to mine, and she described very positive results, indicating that it was well worth researching this relatively new area of music therapy diagnostic assessments in more depth. This is not altogether surprising as Molyneux trained on the music therapy training course at Anglia Polytechnic University and did one of her clinical placements at the Croft Unit for Child and Family Psychiatry.

At the Croft Unit for Child and Family Psychiatry, my colleague, Emma Carter and I, run a group for diagnostic purposes as well as carrying out individual music therapy assessments. We have recently written an article about this group outlining different purposes for a number of different group activities. (Carter and Oldfield 2002). We have also reflected on the reasons why music therapy might be helpful to aid diagnosis. There are many overlaps here with the individual diagnostic assessments that are carried out at the Croft, which will be described later.

Links between these texts and my work

Wigram's (1995) work was similar to my work at the Croft because he was also using music therapy sessions to assist the team in their diagnosis of children who were on the autistic spectrum. However, at this stage, he did not refer to a specific scoring system or assessment form similar to the systems I have been using at the Croft. This may well be because, as his case studies showed, the range of children seen at Harper House was far more diverse than the children seen at the Croft. It must also be remembered that Harper House is an outpatient clinic while the Croft is an in-patient Unit. This means that the range of assessments carried out at the Croft will include evening and night time observations and will generally be more intense than those that can be carried out at Harper House.

Wigram's (1999 and 2000) assessment model had some similarities to the model I describe both here and in an article written in 2000 (Oldfield 2000). For example, we both include a variety of different musical activities in our sessions which each help us to answer specific questions about the child's strengths and difficulties. In both Wigram's and my work, free and structured musical improvisations play an important part in the sessions. In some ways Wigram's adaptation of Bruscia's Improvisation Assessment Profiles took the diagnostic process in a very different direction to the work I am doing because he focussed on detailed musical analysis of different elements of the children's playing. In my work I have avoided purely musical analyses as I have been interested in comparing my assessment procedure with other non-musical assessment systems. I wanted to ask questions that were relevant to the music therapy assessment but could be compared to the questions that were being asked in other diagnostic tests. Nevertheless, the fact that Wigram focussed on Bruscia's Autonomy and Variability Profiles (Bruscia 1987, p.404) shows that the elements that he considered to be important in music therapy work with children on the autistic spectrum are also aspects that are central to my

approach. In the video that accompanies this thesis I highlight "Balance between following and initiating" as one of the very important features of my work. In my Music Therapy Diagnostic Assessment described in Chapter 5, many of diagnostic questions are concerned with autonomy and variability.

The type of information Wigram was collating in his most recent article on music therapy assessment (Wigram 2002) was also similar to the information I am trying to obtain from my Music Therapy Diagnostic Assessments. However, in my study I have tried to design a test which can easily be compared to the ADOS (Autistic Diagnostic Schedule), and which can be used with all the children who are diagnosed at the Croft Unit for Child and Family Psychiatry, rather than be specific to one child.

Although only a few music therapists have written about using music therapy directly for diagnostic purposes, many music therapists have touched on the subject when describing a variety of different assessment procedures, or when exploring short-term music therapy work. Much of the work described here has had positive outcomes and there seems to be a growing interest in music therapy assessments, short-term music therapy and music therapy diagnostic assessments. It seems logical to start thinking about music therapy diagnostic assessments in a clinical area such as autistic spectrum disorder, which, as the literature shows, has attracted much interest for many years.

Having explored the literature on the two main topics relevant to this PhD, namely music therapy with children with autistic spectrum disorder and music therapy diagnostic assessments, I will now explore some of the literature, which is relevant to my particular music therapy approach.

This music therapy approach will be described in detail in another part of this thesis, but there are three aspects of my work which are a little unusual and where I was interested in finding out whether other people had written about similar approaches.

These three areas are:

- working jointly with the mother (or principal carer) and the pre-school child with autism;
- using movement in conjunction with improvised music;
- using single-lined orchestral instruments such as the clarinet.

2.4 Literature related to working jointly with the parent and the child

In a previous research project, which I carried out with Bunce between 1998 and 2000, (Oldfield and Bunce 2001) we investigated two short-term music therapy groups with mothers and young children. The work had very positive outcomes showing that parents and children were very engaged in the music therapy groups. We were also able to show that the parents experiencing difficulties in their relationships with their children were less likely to see the positive side of their children's behaviours than a group of parents who were not experiencing difficulties with their children (Oldfield *et al* 2003). In this project we explored some relevant literature, some of which I will use here.

My first concern was to find out whether other clinicians felt that there was a link between parents and children's behaviour. I did not attempt to consult all the literature in this field but rather to select a few relevant articles.

2.4.1 Links between mothers' and childrens' behaviours

A review of related literature shows a general link between mothers and children's behaviour. Consequently helping the mother relate to her child can improve that child's behaviour. A mother's mood has a direct effect on her child. Seiner and Gelfand (1995) showed that 18-36 month old children increase their positive and negative physical bids to their mothers and exhibit more unfocused behaviour and physical withdrawal when their mothers are unresponsive and appear unhappy.

Interestingly a comparison between homeless and low-income housed pre-school children showed that although the homeless children were significantly more likely to have experienced stressful life events, undergone a care and protection investigation, and

been placed in foster care, when compared with low income pre-school children differences in adverse behaviours were minimal. The strongest determinant of children's behaviour was the mother's emotional status, (Bassuk, Weinreb, Dawson, Perloff and Buckher, 1997).

Other research has highlighted that parental involvement with the pre-school child enables them to cope with the transition to nursery school and enhance the quality of their nursery school experience. (Petrie and Davidson, 1995) More specific intervention has shown that parents can change and affect their children's behaviour. Holkup wrote how a therapy group helped families understand the history of their own growth and development and that of the families they in turn produced. Parents then learnt how to change their part in painful interactions with their children, thus opening the possibility of healing between generations. (Holkup, 1998). Sluckin (1999) used family art therapy to help three mothers and babies experiencing major difficulties in co-ordinating their actions. In this work, he used both the images from the artwork itself and those from filming the encounter, and helped the mothers to see the positive elements in their interactions with their babies.

This literature clearly shows that there are close links between mothers and children's behaviour. This supports the idea of working closely with mothers and young children together, so that changes in the child (or the mother) can be assimilated by the mother (or by the child). Sluckin also showed how important it is for the mother to focus on positive aspects of her relationship with her child. This is central to my approach when working with mothers of young children with autistic spectrum disorder.

Other literature has documented the specific condition of postnatal depression, its effect on the pre-school child and the possibility of help. I am not implying that all or even most parents of pre-school children with autistic spectrum disorder are depressed. Nevertheless, these parents have to make huge adjustments and often struggle with adapting to the very special needs of children with autistic spectrum disorder. Some

parents of children with autistic spectrum disorder will become low in mood and need as much support as possible. It is therefore useful to examine some of this literature.

2.4.2 Maternal Depression

A longitudinal study undertaken at the Winnicott Research Unit in 1996 set out to assess the influence of postnatal depression on child development. Researchers reported that an early experience of "insensitive maternal interactions predicted the persistence of poorer cognitive functioning", (Murray, Hipwell, Hooper, Stein and Cooper, 1996). A further study noted that maternal depression can affect a child's adjustment to school. Although social class and gender had the most pervasive influences on adjustment, both postnatal and recent maternal depression were "associated with significantly raised levels of child disturbance, particularly amongst boys and those from lower social classes". The conclusion highlighted the need for resources to support mothers of young children. (Sinclair and Murray, 1998). Research has suggested that early intervention should focus on "repairing mother-child interactions", because depressed mothers are less likely to repair interrupted interactions, and their children are less likely to maintain interaction. (Jameson, Gekfand, Kulcsar and Teti, 1997). Mohan (1998) wrote how a "currently depressed mother is approximately six times more likely to have a child with behaviour problems than a mother who is not depressed". Mohan suggested that when managing a child with behavioural problems, the mental state of the mother should be considered and also addressed by clinicians.

Although, as I indicated earlier not all mothers of young children with autistic spectrum disorder are depressed, many may still be adjusting to the particular difficulties their child with autistic spectrum disorder is experiencing. Being present at music therapy sessions is often an opportunity for parents to see their child succeeding rather than failing, which can be really helpful if they are struggling to see the positive sides to their child. In a previous article (Oldfield 2001 a) I have described several cases of music therapy work with young children with autistic spectrum and their parents where the parents as well as the children have benefited from the treatment.

2.4.3 The mother's internal models of relationships

It is not only mothers with a specific depression that may need help in relating to their child. Crowell and Feldman (1988), showed how a mother's internal models of relationships affect her interactions with her child. In this study the mother's internal models of relationships, based on descriptions of childhood relationships, were characterised within the attachment classifications of 'detached', 'preoccupied' or 'secure'. Results showed children's behavioural and developmental status, as well as mothers' internal models, to be associated with dyadic behaviour. Children's behaviour corresponded to mother's internal models and to behaviour and developmental status even when the effects of the mother's behaviour was removed. Where there are difficulties, studies emphasised the need to identify pre-school behavioural problems to enable an early intervention. (Pavuluri, Luk, Clarkson and McGee, 1995)

Grimm (1995) was able to show that mothers of children with specific language impairments adapted the way in which they communicated with their child to the special needs of that child. However, they tended to treat their children as cognitively immature and socially limited even when this was not the case.

When a mother has a child with autistic spectrum disorder, she has to change her internal model of relationship to adapt to her child's very special needs. Many parents will need as much support and encouragement as possible during this adjustment period and joint music therapy sessions will often be a good way for parents and children to develop non-verbal ways of communicating.

Clearly, there is much evidence to suggest that there are huge advantages to treating parent and child together, not only when relationship problems exist but also to prevent relationship problems from developing. Although many parents of children with autism do not have difficulties relating to their children, supportive music therapy sessions

where new ways of communicating can be explored are usually very helpful even to parents who do not feel that they are struggling in any way.
I will now explore literature that music therapists and other professionals have written that is relevant to joint work with parents and children.

2.4.4 A natural link between parent and child

One of the earliest and most common forms of musical interaction between a parent and child is that of a mother (or father) singing to soothe a crying infant. Although the main objective may be to stop the crying, the music will serve many other functions. The act of singing may have a calming influence on parent and help them to feel closer to their baby. If they feel they are relieving their child's distress this will boost their confidence and help them to feel positive about their relationship with their baby. The baby may well react to the parent's heightened sense of well-being and this may in turn help the baby relax and feel at ease. (Oldfield 1996).

Bunt (1994) mentioned even earlier musical links between the mother and her child when he explores what influences sounds can have on the baby in utero. He referred to one study by Ockelford (1988, cited by Bunt 1994) where it was found that young babies less than twenty-four hours old could orientate themselves to the sound of their mother's voice, indicating that infants recognised the voice that has previously been heard in utero. Lecanuet (1996) reviewed the literature on prenatal auditory experience and found that the fetus is stimulated by and reacts to a large variety of sounds including speech and particular musical sequences from approximately 28 to 30 weeks of gestation.

Both these examples illustrate 'natural' ways in which sound and music enabled parents and young children to communicate. The use of music therapy to enhance difficult relationships between parents and young children could therefore be seen as an extension of a phenomenon which is already present in our society. This could be of particular importance to parents of children with autistic spectrum disorder, where it may have been difficult to communicate with their baby in the usual ways.

2.5.5 Music therapists specialise in non-verbal communication

In a previous article I explained that music therapy can be used as an effective intervention with families who have difficult relationships with their children, or where the child's inability or unwillingness to communicate is causing difficulties, (Oldfield 1993). This is partly because of the intricate similarity between mother and baby interactions and the playful musical interactions between a music therapist and her child clients. I became acutely aware of these similarities when I was looking after my eight month old twins at the same time as working as a part time music therapist and treating a three-year-old boy with Asperger Syndrome. Obviously, my role in the two situations was very different. In one case I was a mother interacting with my babies, in the other I was a therapist interacting with my client. But it was the form these exchanges took rather than other aspects of the relationships that was similar. Both interactions were mainly non verbal, and relied to some extent on intuitive and spontaneous exchanges. In both situations, the exchanges were playful and included gentle teasing, humour and laughter. Issues of control came up both with the babies and the client. Initiation and leadership would subtly shift between the adult and the child in the non-verbal interactions. The similarities between the two types of interactions are clearly illustrated in a training video entitled 'Timothy - Music Therapy with a little boy who has Asperger Syndrome' (Oldfield and Cramp 1994), where ongoing music therapy sessions with Timothy (aged three) are compared to my interactions with my own eight-to-twenty-two-month old baby daughters.

The similarity between these two types of interactions has important implications for the music therapist. Firstly, music therapy can allow a non-verbal and/or non communicating older child to go back to a pre-verbal stage in order to recreate basic sound responses and exchanges. Secondly, music therapy can provide an opportunity for the mother and child to re-experience, or experience for the first time, more positive early mother-baby types of interactions. Furthermore, music therapy can be a forum to

explore and experiment with issues of control between parents and children. Lastly, music therapy can give adults an opportunity to experience play and be playful in a 'child-like' way. If parents can enjoy playing, their children will be aware of this enjoyment. This can provide an initial bond between the parent and child, (Oldfield 1996).

To come back to the second point, this is particularly relevant to music therapy work with children with autistic spectrum disorder. The parents I have worked with have usually reported that their children have not babbled in an interactive way as babies. Kubicek (1980) analysed mother-infant interactions involving a normal infant and his fraternal twin brother who was later diagnosed as having autistic spectrum disorder. She found that even as early as three-to-sixteen weeks the two babies interacted very differently with their mother and that, as a result, the mother changed her way of communicating with her less responsive child.

Ricks (1979) had a similar experience to mine when he was attempting to promote communication in a small group of hospitalised young autistic spectrum children at the same time as his seven-month old son was developing spoken language. As a result his interest was focussed not only on a comparison of the vocalisations of normal infants and autistic spectrum disordered children but also on the infants response to parents' efforts to stimulate speech. In both Ricks' and my case, the experience of being a parent of a preverbal baby resulted in a heightened awareness of non-verbal types of communication between other infants or children and their carers. Although music therapists are used to communicating non-verbally, most adults are not. Parents develop this expertise as their relationship with their infant progresses. In a study of interactions between mothers and two-month old babies, Trevarthen (1979) showed that each mother and infant develop very specific conventions of communication.

2.4.6 Musical babbling

When analysing the rhythms of early mother and baby sound exchanges, Daniel Stern (1996) found that the mother intuitively changed the rhythm of her responses to her baby after two or three strict imitations of her baby's sound. The echoing of the baby's sound initially engaged the infant but the rhythm of the mother's vocal response was then slightly altered so that the child remained interested in the exchange and did not become bored. He also noted, in an earlier study, that the mother altered the pitch and intensity of her imitations to 'tune' into and match her baby's mood, (Stern 1985). In the same way the skilled music therapist will often first imitate her clients' musical contributions but soon subtly introduce harmonic, melodic or rhythmic changes to maintain and intensify the quality of the improvised musical exchange.

It is interesting to note that researchers describing pre-verbal communication in infants often use musical terminology. Thus Bullowa (1979, p.17) talked about the 'rhythms' involved in interpersonal communication being biologically based and later wrote about "which partner controls the joint performance which results in communication". As music therapists use musical improvisation to communicate non-verbally, perhaps it is not surprising that musical terminology is 'borrowed' to describe other non-verbal forms of interaction.

Hanus Papousek (1994) showed that infants as young as eight weeks old were already communicative and that even at this early stage parents were modulating the patterns and melodic contours of their vocalisations to adapt to each infant. In the same book, his wife Mechthild Papousek (1994 and 1995) suggested that parents and infants shared a 'pre-linguistic alphabet' in the form of musical elements and that, as the infants' pre-linguistic skills developed, parents adjusted their vocal stimulations to support each individual infant's early musical competence.

There is not enough space here to describe the work of Stern and the Papouseks more fully, or to examine all the literature on the psychology of music, which could be relevant to music therapists working with mothers and children with autistic spectrum disorder. The important point to be made is that the early interactions that Stern, Bullowa and the

Papouseks described are similar to the types of non-verbal musical interactions that occur in music therapy sessions. As a result a number of music therapists have become aware of how relevant the study of mother-infant interactions is to music therapy processes, in the same way that psychologists and medical practitioners have become aware of the musical nature of interactions between mothers and babies.

2.4.7 Music therapists writing about similarities between mother-infant interactions and music therapy processes

Pavlicevic (1990, 1995 and 1997) referred to the literature on mother-infant interactions to clarify the music therapists' use of clinical improvisation in music therapy. She listed key issues which she felt were essential to what she called 'direct human communication' which included 'the susceptibility of a person to the other' and 'the capacity to read the meaning of the other's acts'. She explained how:

> Parents respond to their infants' vocalisations as though these are communicatively meaningful, and this encourages and invites infants to develop their capacity to use their voices in a communicative sense (Pavlicevic 1995, p.169).

Pavlicevic (1997) used the concept of 'dynamic form', which she believed corresponded to Stern's (1985) 'vitality affects' but was explicitly musical in character. She explained that in music therapy, clinical improvisation reveals personal rather than just musical qualities about the people engaged in the playing. She wrote:

> The concept of Dynamic Form crystallises why music therapy makes therapeutic sense. By understanding the dual nature of Dynamic Form, we can draw multi-faceted meaning from the jointly created form (Pavlicevic 1997, p.137).

When thinking about Pavlicevic's concept of Dynamic Form in relation to children with autistic spectrum disorder, Robarts (1996) suggested that the dynamic musical processes in therapy can help us to understand how the autistic spectrum disordered child's sense of self emerges. She also wrote that:

> ….by using creatively varied structures, moods, styles of approach, the autistic child may begin to discern (aurally) the varied temporal, musical 'shapes' that underpin and organise meaningful two-way communication.…How music may engage motivational states and shape experiences of relationships has been elucidated by research on the responses of normal infants and the musical behaviours of mothers when they play with their infants. (Robarts 1996, p.178).

Agrotou (1988) and Heal-Hughes (1995), compared mother-infant interactions with the client-therapist relationship in music therapy. Agrotou was particularly interested in the parallels between the baby and the client's need to 'withdraw' after an intensive moment of interaction with the mother or the therapist. Heal used the comparison to suggest a model of thinking about the unconscious meanings that adult learning disabled clients are communicating in music therapy sessions.

Stewart (1996) suggested that "the fundamental model for understanding psychodynamic music therapy events is mother-infant interaction". The five authors I have just referred to found that the study of mother-infant interactions helped them to shed new light onto their music therapy work. However, they have not directly applied these conclusions to working jointly with mothers and young children.

The speech therapist, Wendy Prevener (1991 and 1998), developed a special form of what she called 'musical interaction therapy', based on the similarities of mother-infant interactions and playful musical interactive games. She worked with pre-school children with autistic spectrum disorder and their parents and gave the parents lots of ideas of musical games and interactions to develop with their children. She took Pavlicevic's (1995) point about how parents pick up on their infants vocalisations as though they were meaningful further, by suggesting to the parents of autistic spectrum children she works with, that they should join in with their children's spontaneous sounds and movements even if the children did not realise what was happening. If the child enjoyed the game, they might follow their parents' lead and a 'give and take' conversation could develop.

2.4.8 Music therapy literature regarding work with parents and children

There do not appear to be many music therapists who have written about clinical music therapy with mothers and young children. The work that has been documented will now be described briefly.

Lenz (1996) worked as a music therapist with mothers and young babies who were experiencing excessive feeding and sleeping problems. She believed that these problems were a result of 'faulty interactions' between mothers and babies and used music therapy techniques to repair the relationships and alleviate the babies' difficulties.

Another music therapist who has worked with mothers and babies is Nocker-Ribaupierre (1999). Her work has been specifically with premature babies and has included playing recordings of the mother's voice to the babies. She felt that it was particularly important for the infant's development to hear their mother's voice in order to have a 'continuum for primary acoustical representation'.

Robarts (1996) wrote a detailed case study about Colin with whom she worked over a period of two years for 44 sessions. Colin had autistic spectrum disorder, was three and a half years old when the music therapy started, and his mother was present in the room with them until the last six sessions. At this point it was agreed that as he had started school and could now easily separate from his mother, it would be appropriate for Colin to be seen on his own. Robarts described how, as work progressed, a three-way interaction with Colin, his mother and herself developed. Colin's vocal communication became more consistent and playful in character and he became able to communicate with more than one person at a time. Although this case study focuses mostly on the changes in Colin rather than on changes in the relationship between the mother and the child, it is very clear that the mother is included both in the work and in discussions about the way the work is progressing.

Anna Jones, (Jones and Oldfield 1999, p.171) who took part in eighteen months of weekly music therapy music therapy sessions with her three-year-old boy with autistic spectrum disorder wrote about her experience. "I enjoy the music therapy sessions with

John very much. I feel as though I am sharing something with him that he really enjoys and that he very much wants me to be there with him."

Levinge (1993) described a project with three separate mothers and their young children, concluding that: "music therapy had been able to provide a nurturing facilitating environment in which each couple could be nurtured".

In 1993, I described some short case studies of music therapy work with families, (Oldfield 1993). In one case the mother's confidence in her own abilities to make music with her two children increased and gave her an opportunity to enjoy playing with her children which she had previously found difficult. In another, the music therapy sessions allowed the mother to use her voice and face more expressively and convey her feelings more clearly to her son.

In a different study, (Oldfield 1999), when focussing particularly on the importance of listening to children, I gave an example of a teenage mother who was able to allow herself to enjoy music making because her baby was responding to the music. In another example in this same article, a mother was able to enjoy the conducting role her extrovert toddler was playing in a music therapy group. Previously she had only seen her daughter's need to control others in a negative light.

In a recent training video (Oldfield and Nudds 2002), I focussed on enhancing the strong bond between a partially-sighted toddler with cerebral palsy and his father. Music therapy sessions allowed them both to explore vocalisations, interactive babbling and then words and speech.

Bunt (2002, p.73) wrote a case study about two years of individual music therapy with a three-year old girl with autistic spectrum disorder and her mother. Many of the themes that the little girl's mother commented on, such as her daughter's need for control and her growing enjoyment in sharing and turn-taking, were similar to those that came up in the semi-structured interviews with the parents in my Child Development Centre outcome

study (in chapter 4). He concluded this case study by saying: "The music clearly helped to deepen the relationship between the mother and the child. This was demonstrated particularly in the way Suzanna included her mother in the musical play".

All these descriptive examples seem to indicate that both parents and children benefit from joint music therapy sessions. Indeed in some cases the families' difficulties can only be addressed when the therapist focuses on the relationship between the mother and the child. When working with children with autistic spectrum disorder and their parents, the original focus will often be on addressing the child's difficulties. However, the interactions between the child and the parent always remain central to the sessions, and it seems of paramount importance to support the parent and the child in their efforts to communicate.

Warwick (1988) concluded an article in which she was describing her work with mothers and young children with autistic spectrum disorder by saying "There is a real need for therapy in the family setting.....mothers should have the opportunity to share such a creative experience in sounds and silence, time and space", (Warwick 1988, p.7). In Warwick and Muller's (1995) research into this work, one of the hypotheses investigated was that 'the mother's perception of and attitude towards her child will become more positive'. This is the only 'outcome' music therapy research that I have found in this field.

Thus, although there is not a great deal of literature on music therapy with mothers and young children, the above texts indicate that music therapy has been successfully implemented with a wide variety of mothers and children. Music therapy seems to enhance the bond between mother and child, enables mothers to gain new insights about their relationships with their children and in many cases improves the quality of life for the child and the mother.

2.5 Literature on music therapy and movement / music therapy and single lined instruments

In my work with children with autistic spectrum disorder, I have found that movement plays an important part in almost every session. My musical improvisations are often initially based on accompanying a child's movements. I find myself mirroring the children's movements, playing 'peek a boo' and spontaneously combining sounds and movements.

2.5.1 Movements in early mother-baby interactions

Perhaps, there are more parallels here with early mother-baby interactions. As well as imitating their babies' sounds, mothers will often spontaneously mirror their babies' movements. Trevarthen (1979) showed that infants as young as six weeks used facial expression and arm and leg movements to communicate pleasure or distress to their mothers. Bullowa (1979) made the point that as the baby develops vocal sounds and speech, the movements and gestures gradually diminish and sometimes disappear altogether. Once the mother and the child can interact through speech, they may then loose the ability to communicate non-verbally together. If the baby with autistic spectrum disorder has never developed a system of non-verbal communication based on movement exchanges with its mother, it may be that this communication system can be explored and developed in music therapy sessions.

Another important factor is that almost all the children with autistic spectrum disorder that I have worked with move easily and freely. Many children with autistic spectrum disorder walk early and enjoy running and jumping. Their physical development is often seen as a positive strength. In a recent article, Pavlicevic (2001, p.14) started off her description of a young girl with autistic spectrum disorder by saying: "Anna, a child with autism, runs around the music therapy room constantly, in a skipping mode that is both light and clumsy". As many children with autistic spectrum disorder move with such ease, it therefore seems logical to attempt to build on this strength by responding to the movements in as creative a way as possible.

Newson (1979) emphasised that the mother talks to her young pre-verbal baby as though the baby is a sophisticated communicator. In a similar way I will often pick up on a child's movement as though it is the beginning of a communicative gesture. This idea is also used by the speech therapist Wendy Prevener (1991) in her 'Musical Interactive Therapy'. She encouraged parents to enter into their autistic spectrum children's world by imitating and extending the child's spontaneously produced sounds and movements.

I am therefore suggesting that many children with autistic spectrum disorder can be encouraged to communicate by being given a chance to develop some of these early movement exchanges.

2.5.2 'Movement' as a therapeutic intervention

There are several books and many articles on the subjects of dance-movement therapy. The fact that dance-movement therapy is an established profession in its own right shows that movement is of great importance not only as a means of locomotion but also as a means of expression and communication. I will not explore this literature fully here, but would like to mention the work of Burford which has particular relevance to my music therapy approach with autistic spectrum children.

Burford (1988) explored the interactive movements of children and adults with profound learning difficulties. She found similarities in the timing and frequency of these cycles of movement in the different groups of people she studied. This study showed that movements were used expressively as an interactive medium even by people with profound learning difficulties. Burford (1993) and Trevarthen and Burford (1995) encouraged parents and carers to use movements to interact with their children or clients with multiple handicaps, always considering each child or client as an individual with unique expressions. In her work, Burford also emphasised the musical nature of these movement exchanges, explaining about the rhythmic patterns in the 'give and take' movement conversations. In many ways Burford's approach seems similar to mine. However, she focused on the movement exchanges first while being aware of the musical

timing. I focus on the musical exchange, which will have developed from accompanying and entering into the child's movements.

2.5.3 Music therapists who have written about using movement

When writing about the case of Edward which I have already referred to, Nordoff and Robbins (1977, p.27) explained that: "It had become a standard clinical procedure when working with a psychotic-autistic child who did not use the instruments to take any movement or sound habitual to him and accompany and express it with music; this was often the only way of gaining an initial contact."

Orff (1980, p.44) talked about how important a part movement played in the music therapy approach she developed from Carl Orff's music teaching techniques. She talked particularly of the value of imitative movement sequences.

In 1985, I wrote an article with a physiotherapy colleague looking at the ways in which music could enhance the movements of people with learning difficulties. (Oldfield and Pearson 1985). We described how music could stimulate movement or help clients to relax, and how music combined with movement could be a means of creative expression. However, at that point I did not explore how I was using music and movement to develop interactive improvisations.

Also in 1985, the music therapist Tony Wigram and the physiotherapist Lyn Weekes collaborated to write an article about linking a series of movements to music in order to increase the mobility of two groups of severely physically and mentally disabled children and adolescents, (Wigram and Weekes 1985). The emphasis here was on facilitating movement rather than establishing communication and the authors noted in particular that the music making seemed to make it easier both for the children to move and for the physiotherapist to encourage their movement.

Ridley (1987) looked at how music therapy could evoke spontaneous motor response and motivate movement with severely learning disabled people with dual sensory

impairment. Her starting point was to observe the individual movements that clients made and her focus was on extending movements rather than on combining music and movements to enhance interaction.

Schulz (1987) explored various music therapy approaches to the stereotypic movements of children with autism or learning difficulties. He concluded that at times he found it was useful to divert the child he was working with from stereotyped movements, and at other times he found that it was important to work with the child's stereotyped movements, supporting, mirroring, playing with, answering, asking. (Schulz 1987, p.16). This flexible approach is similar to the way that I interact with children with autistic spectrum disorder with stereotypic movements. Entering into a child's repetitive movements in a musical way can often be a first point of contact.

Saperston (1973) described a case study with a profoundly learning disabled boy with autistic spectrum disorder. By accompanying the boys' movements in a creative and consistent way, Saperston gradually established contact with this severely isolated child. I also often try to accompany the movements of the children I work with. Like Saperston I find that this frequently leads to humorous and exciting exchanges.

Although not many music therapists have specifically written about using movement in their work, I think that movement is an important part of many music therapists practice. There are many links between music and movement. Most forms of dancing are accompanied by music and the word 'dance' can mean a sequence of movements or a particular style of music. Ekemezie Mereni (1996) alerts us to the fact that in one of the Bantuic languages of Africa the word 'egwu' means rhythm as well as 'to sing' and 'to dance'. In other words, conceptually speaking, rhythm is impossible without motion.
A direct consequence of 'being on the move' in my sessions with children with autistic spectrum disorder is that I must use portable instruments if I am to accompany the movements we make musically. To do this I use my voice and percussion instruments. However, I also use my clarinet and have found this instrument to be particularly useful in my work.

2.5.4 Music therapists who have written about the use of single line instruments

When looking at the music therapy literature to see whether colleagues had written about the use of single line instruments in their work, I found several references to and reflections on the use of the voice, such as: Di Franco 1999, Turry 1999 and Heal 1989. However, there do not seem to have been any specific studies or articles on the use of orchestral instruments in music therapy. Nevertheless, some music therapists have made references to having used orchestral instruments in their work. Storey (1998), for example, writes about using the flute to play particular pieces in music therapy sessions. Bunt (2002, p.82) relates how the mother of a three-year-old girl he was working with was first able to give her daughter a 'cuddle' while they were listening to a music therapy student playing the viola. Alvin (1966) believed that the sound quality of the cello was particularly appealing to many of her clients and that there were some people she was only able to connect with through her cello playing.

During this research investigation, I have given two lectures where I have explored the way I use the clarinet in my music therapy work. In the first, I looked at the parallels between my clarinet playing in chamber music groups and in music therapy improvisations (Oldfield 2001 b), and in the second I looked at the general use of single lined instruments in music therapy (Oldfield 2002). I have also explored some parallels between chamber music playing and my work with children with autism in a training video I made in 1999 (Oldfield *et al* 1999).

Given that many music therapists in the United Kingdom are very good at playing orchestral instruments, I suspect that different instruments *are* used in music therapy sessions. Perhaps more will be written about the use of orchestral instruments in music therapy in the future.

2.6 Summary / Reflections on this literature review

Many music therapists have written about successful work with children with autistic spectrum disorder. Many therapists from all over the world reported in a

positive and enthusiastic way about music therapy interventions with a wide range of children on the autistic spectrum.

A few music therapists have suggested guidelines or specific ways of proceeding when working with this client group. Many of these suggestions overlap with some of the ideas I put forward in this thesis. This again is encouraging as it suggests that many clinicians have independently arrived at the same conclusions.

When looking at my particular music therapy approach which involves working jointly with mothers and children, I found a wealth of literature written by a wide range of professionals that supported the idea of working with mothers and children together. I also found a rich body of literature describing pre-verbal mother and infants communication, which seemed to have much in common with music therapy processes. Interestingly, I discovered that a significant number of music therapy colleagues had also noted these parallels. However, surprisingly few music therapists have written about joint work with parents and young children.

Similarly, not many music therapists have written about the use of movement in their work and almost none mention the use of single line orchestral instruments.

Thus, although many music therapists have described their work with children with autistic spectrum disorder and some have suggested guidelines for this work that overlap with my ideas, my particular approach seems to be different enough to constitute new material which is worth describing and analysing.
Music therapy is not traditionally used as a diagnostic procedure. Nevertheless, short-term music therapy seems to be on the increase. A number of music therapists have developed diagnostic assessment procedures in child psychiatry. There are some interesting overlaps between these procedures and the Music Therapy Diagnostic Assessments I have developed. Nevertheless, the system I use is sufficiently different to warrant investigation.

There have only been a small number of experimental research projects in this field. The two experimental projects I have undertaken here are different from any of the previous

investigations and should, therefore, be a useful addition to the experimental investigations into music therapy with children with autistic spectrum disorder.

These two investigations, as well as the other research investigations in this field, should provide useful support to the conclusions my colleagues and I have arrived at through clinical experience with children with autistic spectrum disorder.

Chapter 3 :: Description of my work as a music therapist with children on the autistic spectrum

3.1: Introduction

3.2: Specific points about working at the Child Development Centre with Pre-school children and their primary carers

3.3: Specific points about using Music Therapy Diagnostic Assessments (MTDA) at

the Croft Unit for Child and Family Psychiatry

3.3.1: The Croft Unit for Child and Family Psychiatry

3.3.2: History of the music therapy post at the Croft

3.3.3: Description of the MTDA

3.3.3.1: General points

3.3.3.2: The room / equipment

3.3.3.3: Structure of the session

3.3.3.4: 'Hello song'

3.3.3.5: The children's choices

3.3.3.6: Free improvisation

3.3.3.7: Percussion dialogues

3.3.3.8: Improvised story

3.3.3.9: Goodbye

3.3.4: Feeding back to the rest of the team

3.4: Summary and Conclusion

3.1: Introduction

In this chapter I will describe and try to determine what characterises my approach in two distinct areas of music therapy work with children with autistic spectrum disorder. These two clinical areas are: music therapy with individual pre-school children with autistic spectrum disorder and their primary carers, and music therapy diagnostic assessments with children between the ages of four and twelve who are thought to be borderline autistic spectrum disorder.

The video that accompanies this thesis forms part of section 3.2 in this chapter.

As I mentioned previously in chapter 1, there will be some overlaps between chapter 1 and chapter 3. However, I have tried to cover general aspects of my music therapy approach in chapter 1, whereas in chapter 3 I attempt to tease out aspects of the work which are specific to the two clinical areas I am referring to in this chapter.

3.2: Specific points about working at the Child Development Centre with Pre-school children and their primary carers

3.2.1: The Child Development Centre (CDC)

The Child Development Centre is an out-patient centre attached to Addenbrookes General Hospital. Children of all ages with a wide range of difficulties will be referred, usually by their GP or by another medical specialist. The majority of children will first be referred before they are two years old.

Children will be initially assessed and diagnosed by paediatricians who might recommend further medical investigations, or other assessments by the clinical psychologist, the physiotherapists or the occupational therapists. Once a diagnosis is reached the child and/or the family may then be referred to a variety of professionals at the centre for regular weekly group and/or individual treatment.

Staffing at the Centre includes: specialist doctors, physiotherapists, speech therapists, occupational therapists, a clinical psychologist, a health visitor, a social worker and a music therapist. Staff also liaise closely with other professionals in special schools and voluntary organisations who may not actually work at the centre but may play an important role for the child and/or the family.

Although the treatment approach at the Child Development Centre is primarily focussed on the child who is experiencing difficulties, parents and carers are given as much support as possible and are often closely involved in the treatment.

3.2.2: Music Therapy at the Child Development Centre

3.2.2.1: History of the music therapy post at the Child Development Centre

Music therapy was first established at the Child Development Centre in 1980. At this time, the music therapy provision at a nearby institution for people with learning disabilities, the Ida Darwin Hospital, was increased, and it was felt that four hours a week of that provision should be spent at the Child Development Centre. When I left my post at the Ida Darwin Hospital in 1987, to take up a part time post in Child and Family Psychiatry, it was decided that I should keep the four hours at the Child Development Centre so that the two part-time music therapy jobs with children could be combined. This has been a very practical arrangement as CDC children have sometimes been referred on to the Croft Unit for Child and Family Psychiatry (Croft), or Croft families have been offered appointments at the CDC and it has been helpful working as a music therapist in both places.

3.2.2.2 General description

At the CDC I work in a large treatment room which is used by other therapists when I am not present. The room is well equipped with a piano, a guitar and a wide selection of

simple percussion, wind and string instruments. At one end of the room, there are some large mobile red screens behind which I store the instruments when they are not in use, but which can be useful for children to hide behind during music therapy sessions, as illustrated in the case study in Chapter 1 (1.6.7).

Music therapy referrals come from other CDC staff who have already assessed and treated the referred child. As I only work at the CDC one day a week, I feel that the best use of my time is to treat children and their families. This is why I don't usually take part in diagnostic assessments at the CDC. Nevertheless, if in the future more music therapy time became available it would be useful to think about the possible role of music therapy diagnostic assessments at the CDC.

At the CDC I treat children with a wide range of difficulties either individually or in groups. However, over the past ten years the majority of referrals have been of children with communication difficulties, many of whom have been on the autistic spectrum.

3.2.2.3 Increase in referrals of children with autistic spectrum disorder

There has been some debate amongst staff at the CDC regarding why the Centre has recently had so many more autistic spectrum disorder referrals. This could be partly because there is a greater general awareness of the condition and because, as a result, more parents are expressing concerns about children with borderline symptoms. It could also be that the diagnoses of autistic spectrum disorder has broadened and children who previously would have been diagnosed as learning disabled are now being diagnosed as having an autistic spectrum disorder in addition to having a learning disability.

The reason a high proportion of these children are being referred to music therapy is that the staff at the centre and parents in the area have become aware that these children can often be helped through regular music therapy sessions. This growing awareness of the general effectiveness of music therapy for children with autistic spectrum disorder has come about gradually. As I have worked continuously at the CDC for over 23 years and a

high proportion of the children I have treated have been on the autistic spectrum, more families are now aware that music therapy can be helpful in this area. The training video I have made about music therapy with children on the autistic spectrum has also now been seen by many parents who will often show the video to other families they know with children with autistic spectrum disorder. (Oldfield, Nudds and Macdonald 1999). In general, the profile of music therapy in Cambridge has been raised since the MA music therapy training course started up at Anglia Polytechnic University in September 1994. When I started working in the Cambridge area in 1980, this was the only specific music therapy post for children. There are now eight music therapists working with children in Cambridge.

Since the increase in the music therapy provision for children in Cambridge, my work at the CDC has been mainly focussed on pre-school children. Once the children reach school age they can be referred on to one of my colleagues working in special schools or mainstream primary schools in Cambridge. This means that I will usually treat children for no more than three or four terms before they start attending school.

3.2.2.4 Links with families and other professionals

I have always aimed to provide support and help for the families of the children I have worked with and tried to discuss my work openly with parents after every session. However, in recent years and in particular since my work with John and Anna described in Chapter 1 (1.6.7) I have usually worked jointly with primary carers remaining in the room with the child when I have treated pre-school children.

I also make sure I discuss children and families with other staff involved in my cases on a regular basis. Sometimes I request particular help from other therapists such as physiotherapists who might come to my sessions and give me advice on how best to position a child. On several occasions, I have run groups at the CDC in conjunction with other therapists such as speech therapists or occupational therapists. (Oldfield and Feuerhahn 1986).

3.2.2.5 Writing notes and reports

My system of taking notes and writing reports at the CDC is based on the same three stage procedure I described some years ago in an article entitled: 'A study of the way music therapists analyse their work', (Oldfield 1993). .

As I am assessing the child I take some very general notes under the headings: attention/ awareness/concentration; ability to accept suggestions or direction; motivation; communication; spontaneity and imagination and any other comments/suggestions. A blank music therapy assessment form is included in Appendix 3.1.

After I have completed my music therapy assessment and if I have recommended that the child would benefit from regular music therapy sessions, I then discuss what my future therapeutic aims might be with the family and the relevant members of the CDC team. These objectives are written into the top of my 'on-going' music therapy assessment form, and every week I comment on how I feel I have progressed towards achieving each of my therapeutic goals. Each of the 'on-going' music therapy forms can be used for six weeks. As I copy my therapeutic aims onto the next sheet I review my progress and if necessary adapt or change my objectives. A blank copy of my 'on-going' music therapy assessment form is included in Appendix 3.2.

When the treatment is completed, or if I am asked to write a report for a case conference, I bring together all the information contained on the 'on-going' music therapy assessment forms to write a music therapy report. A blank music therapy report form is included in Appendix 3.3. The music therapy reports for the ten children in the CDC experimental project are included in the Appendix for chapter 4.

In the music therapy reports I try to be clear about my aims and objectives for the children, which I will have discussed with the parents as treatment progresses. However, I don't always go into details regarding the parents' role in the sessions. Often I will have a 'hidden' agenda which I am clear about in my own mind but I don't feel is necessarily

useful to discuss. For example, I might feel that a parent is 'mismatching' by always immediately copying her child's musical interactions. However, the parent may not be 'strong' enough to be criticised in any way but may be able to pick up subtly different ways of interacting musically with the child from watching my ways of interacting with the child.

3.2.3: Video: 'Musical Connections'

The video attached to this thesis shows excerpts of music therapy sessions with five children (four of them seen with their mothers) who were amongst the ten experimental subjects in the project described in Chapter 4. All the children are between the ages of two and four and are on the autistic spectrum. In this video I attempt to explain why and how music therapy is effective with this client group and to draw out what the features of the work are that characterise my music therapy approach.

I have discussed this video with the five families involved and obtained written permission from all of the families to include the video with my PhD thesis. On the video, I refer to the children by their first names because the names are heard on the video in our musical interactions. I decided to continue using the first names of the five children while reflecting on the processes shown on the video and describing the two case studies. However, in chapter 4, I stick to initials for all the ten children.

I would suggest that readers should look at the video at this point if they have not already done so. The script to this video is included in Appendix 3.4. Some basic background information on each of the children is included in table 4.1 in chapter 4 section 4.3.3. The music therapy reports for each of the children are included in Appendix 4.8. The children in the video are coded in the following way (in order of appearance on the video): Mikey, Mi, appendix 4.8.3; Jamie, J, appendix 4.8.2; William, W, appendix 4.8.1; Imogen, 'I', appendix 4.8.4 and Emilio, E, appendix 4.8.6.

I will now expand on the eight aspects of my work that I mention at the end of the video, referring to the clinical work seen previously on screen. These eight factors attempt to explain why music therapy is effective as well as being characteristics of my particular music therapy approach with this client group. They are: motivation, structure, balance (between following and initiating), basic exchanges, control, movement, playfulness/drama and involving parents.

3.2.4: Characteristics of my approach with this client group

Before elaborating on the eight aspects noted above I would like to describe two other aspects which are also important to my work. These are: 'how I arrange the room' and 'how I structure the beginnings and endings of my sessions'.

3.2.4.1: Layout of the room

Music therapy at the Child Development Centre takes place in a large room, which is set up in the same way every week. The instruments are laid out on shelves within reach of the children in one part of the room, two big red screens stand in another part of the room and there is a large red mat for children to lie on in the centre of the room. Two small chairs are placed to one side of the piano for the child and the mother to sit on as soon as they come into the room. This space between the piano and the instruments has a slightly 'enclosed' feel to it, creating an intimate and reassuring place in this large room to begin the session together. A chair small enough for the child to sit on comfortably with his or her feet firmly on the ground is provided. The mother's (or primary carer's) chair may be a little larger but will be as near as possible to the child's size of chair so that the mother and child are sitting at the same height. Distracting objects in the room such as mirrors or toys are either covered up or completely out of reach.

This layout of the room allows me to associate musical activities with geographical locations in the room. We might play sitting on the chairs (with me sitting on the floor) for example, or sitting on the red mat in the centre of the room. At other times, we might

walk around the room, or play behind the screens. The clear physical boundaries created by the chairs, the red mat and the red screens sometimes seem to help the children to settle and focus.

3.2.4.2: Beginnings and endings of sessions

At the start of the sessions the child and the mother are invited to sit on the little chairs next to the piano. I will usually be holding a guitar, and perhaps strumming a few chords to help remind the child that a music therapy session is about to begin. I make it clear that the chairs have been specially put out for the child and the mother by saying, for example, 'Mikey's chair' and 'Mummy's chair'. As soon as they are both seated I will sit on the floor opposite them both so that I am at the child's eye height and start singing my 'Hello' song. If a child is reluctant to come into the room, I might go out into the waiting room with my guitar and make encouraging comments, or I might leave the door open and sit opposite the two empty chairs, quietly singing and playing the guitar.

The 'Hello' song itself serves as a theme tune which will quickly be associated with the beginning of the session. Whenever possible, I make sure I finish at least one verse of the song even if the child is struggling to move away, or trying to strum the guitar. Usually the greeting song then turns into a free, strumming, vocalising and singing exchange around the open strings of the guitar.

The end of the session is always marked by a percussion exchange on the bongo drums, where I sing or chant 'good-bye' as we're playing. For the ending, I usually make sure that we are sitting on the same chairs, in the same part of the room, as we sat on at the beginning of the session. Even very withdrawn and learning disabled children quickly associate the bongo drums with the end of the session and might point to the bongo drums or go and get them to indicate that they would like the session to end. Sometimes very anxious children will be so relieved by the sight of the bongo drums (signalling the end of the session) that they will relax for the first time at this point, and perhaps suddenly become aware of the therapist and the possibility of communication. The last

few minutes of the session may then become crucial in the therapeutic relationship with these children.

Once we have finished playing together, I make it clear that the session is finished by getting up and perhaps saying 'we've finished now', and accompanying the mother and the child to the door. I suggest to the child and the mother that they might like to bring a toy from the waiting room back into the room to play with while I talk to the mother. While they are out of the room I cover all the instruments up with blankets, shut the piano lid and reposition the furniture slightly so that the room looks different.

My rationale for being quite 'directive' with my 'Hello' and 'Good-bye' activities is that any child – but particularly an isolated child with autistic spectrum disorder – is reassured by a framework surrounding an event. When first meeting a new person, children are used to being talked to and to the fact that attention is directed towards them. Even if an isolated child rejects this attention, it might be frightening suddenly to be subjected to a silent adult who waited for the child to do something before responding. (Oldfield 1995).

The 'Hello' song and 'Good-bye' activity are the only two consistent things that I include in almost every session with every child. What is included in the sessions in between the 'Hello' and the 'Good-bye' is dependent on every child and may vary greatly from week to week.

The contents of the sessions in between the starting and ending points are strongly linked to the eight aspects I draw out of the video that I feel are the characteristics of my approach. I will elaborate on these now.

In April 2001, I gave a paper at the Vth European Music Therapy Congress in Naples (Italy) where I made some preliminary observations about two of the children, Mikey and Jamie, included in the Chapter 4 CDC investigation. Some of the material from this presentation will be included here. (Oldfield 2001).

3.2.4.3: Motivation

All the children on the video are clearly motivated by music. Mikey is very responsive to the sound of the clarinet and Jamie loves making sounds himself and watching for a response. William is drawn into intimate sound exchanges and both Imogen and Emilio use their whole bodies to expressive their immediate involvement in music making.

The children are drawn to the music in a very basic, physical way and they do not need to have any social skills or intellectual abilities to have an initial physical or emotional response to the music making.

Although this initial interest in music is a key factor for all clients receiving music therapy, it is particularly relevant to young children with autistic spectrum disorder because they are mostly not communicating easily through speech. It may well be that for Mickey, Jamie, and William most of the sounds they will have heard adults make around them (i.e.: language) will have had little meaning. Furthermore, the language around them not only has no meaning, but is puzzling as it obviously has meaning for other people. Quickly children with autistic spectrum disorder and little or no language skills can feel excluded from a world where everyone else can communicate through spoken language. The music making is less specific and can have similar general meanings to the child, the therapist and the mother. The music includes the child in a basic form of sound exchange. The child will no longer be the outsider he was when language was spoken. Even for children on the autistic spectrum who do have more language skills such as Imogen and Emilio, music making can have this same equalising effect because each person can interpret the meanings of the musical sounds as he or she pleases rather than being bound by the specific meaning of language.

Another reason why music may be particularly 'motivating', is that unlike painting for example, or putting puzzles together which require attention and interest from the child to be successful, the music making can accompany the child even if he doesn't play any instruments himself or appear interested in any way. Children who are very isolated can

be allowed to roam freely, but the improvised music will accompany the children's movements and perhaps motivate them to take an interest in where the sound is coming from. Mikey, for example, gradually became aware that I was accompanying his walking movements and had started emphasising his stamping. Eventually he started anticipating my responses, partly looking at me to see whether I would pick up on his walking and stamping.

3.2.4.4: Structure

For all the children on the video, the clear structure of the sessions was both important and reassuring. Mikey was anxious about coming into the room and even tearful at times during our first few sessions together. It seemed to be the predictable nature of the sessions which gradually enabled him to relax and enjoy the music. Jamie was never anxious about coming into the room, but needed the clear beginnings and endings with more freedom to move around in between, to accept being asked to sit down briefly at the beginning and at the end of the session. Jamie would find it difficult to remain engaged with me for very long at a time and was pleased to be able to indicate that he had had enough in a constructive way by pointing at the bongo drums.

The predictable structure of familiar children's songs will often be a way of encouraging children to vocalise. In William's second excerpt, it is clear that the well-known phrases of 'Hickory Dickory Dock' allow us to enjoy anticipating the rhythmic changes in the song together. In the next excerpt in the video, he is vocalising in order to complete phrases of 'The Grand Old Duke of York'.

Although I try to be flexible and will often follow the children when they initiate changes in our musical improvisations together, I will also often make a conscious effort to finish songs or musical phrases, rather than stopping midway through. I feel it can be unsettling for the children to hear too many cut-off or fragmented phrases. Instead I try to help the children to 'plan' endings by anticipating or preparing endings to each individual activity.

These endings could be prepared by saying: “one more”, “last one” or “one two three finish” which you hear us doing in Emilio’s last excerpt.

Another structural aspect of music that seems to be particularly relevant is the ability to dwell on repetition without that repetition becoming boring or stale. Actions or phrases can be repeated with slight musical variations to maintain interest. Favourite songs can be transposed into different keys, put into minor modes or rhythmically altered to provide surprises within a ‘safe’ context. Thus a familiar refrain to a song that has included unexpected changes can be seen as a welcome “homecoming” rather than a dull repetition.

Children on the autistic spectrum often have their own repetitive rituals so it is not surprising that a structured, predictable framework would be reassuring. Nevertheless, because the music is improvised and my musical responses will vary from week to week I can ensure that the sessions do not become stuck or inflexible.

3.2.4.5: Balance (between following / initiating)

Although the contents of each of my sessions will be different every week for each child and mother, I am usually aware of alternating between following the children musically, and providing an activity where I expect the child to conform with my suggestions in some way.

With Mikey, apart from being directive for a minute or two in the ‘Hello’ and the ‘Good bye’ activities, I initially spent most of the sessions following his movements and sounds in order to try and gain his interest and confidence. As I got to know him, I started making suggestions to him such as offering him the cabassas to play on the mat (excerpt 3) and playing a game with bells while sitting on the chairs, (excerpt 4). However, neither of these two focussed activities would have been possible with Mikey had they not been interspersed with moments where Mikey roamed freely and I followed him musically.

Playing an instrument such as the clarinet allows me to be very flexible with how much physical space I leave between myself and the child. I can also either face the child directly as I play or turn my back to the child and quite easily chase or be chased in peek-a-boo type exchanges. The musical line can continue while I initiate or move away from direct eye contact. In this way the interaction can easily and quickly change from being direct or indirect communication.

In addition to interspersing non-directive interactions with the child with more directive activities, I also alternate between following the child's musical suggestions and providing my own musical material, when we are improvising together. This is clear with Emilio where at times I respond musically to his 'expectant' silence (excerpt 2) and at other times I provide my own piano structure to keep the improvisation moving, (excerpt 3).

This alternating between following and initiating is used by music therapists working with a variety of client groups. I have described this approach in more detail using the example of a case study of an older child with autistic spectrum disorder and a case study of a child with emotional difficulties (Oldfield, 1995). Wigram (1993) uses a similar approach with disturbed and self-injurious clients.

3.2.4.6: Basic exchanges

Towards the end of my work with Mikey, he was just beginning to allow me to interact playfully with him. By initially following and mirroring Mikey's movements or the way he was playing an instrument, I was sometimes able to capture Mikey's attention for a second. If he then changed the way he was moving or playing and noticed that my response had also changed, we could start a basic exchange. This is clear with Mikey (excerpt 1) when he first notices that I am following his stamping movements. The advantage of improvised sound exchanges is that even very simple and basic exchanges can be repeated and varied to maintain and extend the child's interest in the exchange.

Because Mikey was very responsive to changes in music, his initial reaction to these changes could sometimes be channelled into brief turn-taking.

One could compare Mikey's progress to that of an infant whose mother meets his every need, feeding him when he's hungry and comforting him when he is in need of reassurance. When all the basic needs are met and the baby is relaxed and at ease, he will smile at his mother expecting her to smile back. I tried to follow Mikey musically and to respond to any sound he made, devoting my music and my reactions entirely to his needs. When I managed to 'meet' him musically, I would be answered by an enquiring look, or a brief musical response to my playing, moving or singing.

Jamie very quickly entered into playful dialogues with me. Our exchanges increased in length and grew in intensity. Jamie took turns and initiated his own ideas as well as listening and responding to my musical suggestions. In fact he was using these sound exchanges just like a baby uses babbling with his mother, imitating sounds he hears and adding new sounds with different rhythms or intonations. These babbling exchanges then lead the baby to experiment with more sounds and eventually words. Not surprisingly children with autistic spectrum disorder who use musical sound exchanges in this way often start experimenting with vocal sounds as well which then may lead to words and speech. At the end of our work together, Jamie had started to add vocal sounds to his musical exchanges and started to vocalise to himself when he was playing with toys on his own or at nursery.

As babies Mikey and Jamie were too isolated to interact or babble with their mothers. The music therapy sessions provided an opportunity to return to pre-verbal types of communication, which may then have lead to vocal exchanges and speech. The parallel between mother-baby interactions and sound exchanges in music therapy sessions has been demonstrated and explored further in two training videos I have made (Oldfield and Cramp 1994 and Oldfield *et al* 1999). Many other authors and music therapists have made links between mother/baby interactions and musical exchanges. I explored this literature in Chapter 2.

It is interesting to note that all five children on the video quite quickly showed a definite preference for a particular musical interaction. Jamie very quickly developed a form of stick tapping exchange. Mikey took a few weeks to show us that he was interested in the bells falling off his head in 'London Bridge is falling down'. William took turns piling cabassas on top of one another. Imogen played and moved in a fast rhythmical way while I accompanied her, and Emilio took turns with instrumental and vocal glissandi.

These special exchanges can be repeated and will be welcomed and recognised as favourite moments to share together. I am reminded of Boxhill's 'contact song' which she writes about in her book 'Music Therapy for the Developmentally Disabled', (Boxhill 1985). Obviously, it is important not to let the 'special' activity became stereotyped or boring and to move on when necessary, but perhaps it is of particular importance to children with autistic spectrum disorder to have these reassuring and safe moments to return to within the session. For children who have little or no confidence in their abilities to communicate with the world around them, this safe and predictable moment of exchange could be seen as a kind of 'security blanket' which then enables them to take greater risks and progress further.

Music therapy seems to be an ideal setting to explore and expand on these basic exchanges between adults and children. Janert (2001) describes these basic exchanges as 'games of pure interaction' and explains why these games are so very important and effective in establishing contact with children with autism.

3.2.4.7: Control

Many young children with autistic spectrum disorder prefer or sometimes need to be in control of situations. This wish to be in control is similar to the omnipotence that many two-year-old children would like to exercise over adults in their lives. Unlike some children with autistic spectrum disorder, most two-year-olds gradually learn that the world will not fall apart if they conform to some adult 'rules'. For children with autistic

spectrum disorder who may struggle to understand the adult world, the acceptance of outside boundaries may take much longer and be more traumatic.

Children who struggle with issues of control will sometimes have become locked in battle with adults around them. Sometimes young children with autistic spectrum disorder will have become so used to resisting any requests made of them that they no longer seem able to communicate other than through confrontational or attention-seeking behaviour. For these children it is particularly important not to allow myself to become drawn into confrontations but to help them to re-experience positive exchanges. One way of doing this is to put the child in control of the situation in a very positive way.

In my musical interactions with children, I can very easily set up exchanges where the children can 'control' my playing in a constructive way. Jamie, in excerpt 5, has great fun controlling my playing by tapping the floor. Part of Imogen's excitement in her playing (in excerpt 1) is due to the fact that I am following and supporting her rhythm, which she knows she is leading.

Children who are distressed because they feel they have lost control can sometimes be reassured by familiar structures and tunes, in the same way that returning to a theme tune after another variation has been played can be reassuring.

In addition to reinforcing the positive sides of children being in control, I can also, as I mentioned in the section where I explored the 'balance between following and initiating', consciously alternate between following (being controlled) and leading (controlling). For children who want to be in control for most of the time I can gradually insert small elements of direction in our musical interactions, while reverting to following again if the child starts resisting. For example, the structure of the music itself can provide a 'controlling' element (e.g: an obvious cadence to end an improvisation) which I can manipulate without obviously being in control myself.

In my stick tapping exchanges with Jamie (excerpt 2) I echo and follow Jamie's rhythmic responses. I know that if I stray too far from his original suggestions, he will no longer feel in control and will lose interest in our exchange. A few months later (excerpt 4), I can insert more of my own rhythmical suggestions without losing Jamie's interest. However, this has been a gradual process where I have been careful to make sure that Jamie always continued to have an element of control over our musical improvisation.

In the last video excerpt with Emilio, (excerpt 6), he 'organises' his mother and myself, making sure that we each have a turn hiding behind the screen. Emilio can now accept direction from the adults if he can determine when this happens in our game.

Bailey (2001) wrote her MA thesis on two children receiving individual music therapy treatment and chose to focus particularly on: "negotiating control and facilitating empowerment". Clearly she also found the issue of control to be central to her work with children with autistic spectrum disorder.

3.2.4.8: Movement

Most young children with autistic spectrum disorder are physically able and will have reached their physical milestones such as gaining head control, sitting up and walking at expected times. It therefore seems important to allow young children with autistic spectrum disorder to move around if they want to, and enable them to use their movement skills creatively, if possible, as a means of exchange. Jamie (excerpt 1) was obviously delighted that I imitated his movements. As he became engrossed in our movement exchanges he was also able to pick up and imitate my suggestions. Occasionally, Jamie would become so excited by our movement exchanges that he would become over-stimulated and start running around wildly. Usually, I could predict and feel when this was starting to happen, and stop him from becoming over-aroused by slowing down the tempo of my playing or singing and moving more slowly myself.

Many young children with autistic spectrum disorder like to spend time wandering around the room, briefly looking at or touching objects they meet on the way. Using my clarinet or my voice I can wander with the children and accompany their movements. This was particularly successful with Mikey (excerpt 1 and 5). Quite often children with autistic spectrum disorder use repetitive and stereotyped movements. With some children, I find I can interact with a child through accompanying these movements. With other children I find that the child may become frantic and more isolated if I reinforce the stereotyped or repetitive movements. In this case it may be better to ignore the repetitive movements, or attempt to distract the child from making these movements, or try to modify the movements slightly.

I also find it useful to accompany a child's movements when we are playing instruments together. With Emilio, the fact that I accompanied his waving of the cabassas by a vocal sound (excerpt 5) gave an initially meaningless movement a creative role in the overall structure of our exchange. With both Mikey and Emilio I was able to give meaning and value to a physical movement that the child offered me. The message from me to the child is that they have something of value to offer me, which will hopefully also boost the children's feelings of self worth.

A number of authors have written about the importance of movement in the pre-verbal communication between the infant and its mother, (Bullowa 1979 and Trevarthen 1979). In a research study by the movement therapist Bronwin Burford, she identified cycles of movements that occurred during interactions between mothers and babies as well as during interactions between young adults with profound learning difficulties and their carers. (Burford 1988). As a movement therapist she is able to get to know and 'enter into' the movement patterns of the autistic spectrum children she works with and establish communication in this way. It appears that by communicating with children with autistic spectrum disorder through movement combined with sound, I may be returning to early patterns of communication between mother and babies. Some children with autistic spectrum disorder may have missed out on these early movement exchanges with their mothers because as babies their autistic spectrum disorder prevented them from

being motivated to communicate in this way. I could be re-discovering these patterns of movement exchange linked with sound in my music therapy sessions.

Linking sounds to music naturally lead into games involving an element of excitement and surprise. Mikey loved watching the bells fall off my head (excerpt 4) and smiled when I accompanied my sitting down jumps with glissandi sounds (excerpt 2). Linking sounds to movements naturally lead into games involving an element of excitement and surprise. Many well-known action songs such as 'Round and Round The Garden' or 'Ring a Ring of Roses' naturally link sound and movement to create a climax which young children will anticipate with excitement. Children with autistic spectrum disorder may have difficulties understanding these songs but will react to the excitement that can be generated by crescendi and accellerandi linked with movements and tailored to the musical and movement interests of each child. This is clear with William in excerpt 3, who clearly knows the structure and movements associated with 'the Grand Old Duke of York' without understanding the words to the song.

Children often react with delight when the adult music therapist becomes a child 'with' them and races around the room, or jumps up and down. Jamie (excerpt 1) was a little surprised that I was becoming 'mobile' in the same way that he was. This surprise was immediately replaced with delight when he realised I had turned into a 'playmate'.

By entering into the autistic spectrum child's world of movement I feel I am able to open new doors and provide additional possibilities for communication.

3.2.4.9: Playfulness / Drama

Musical interactions encourage children to be playful and allow adults to be playful again. In my cabassa exchange with William (excerpt 1), I enter into the serious, intent nature of our playful exchanges. William recognises that I am an 'equal' partner in the play exchange and we can both enjoy the excitement of stacking the cabassas on top of one another. There is a ritualistic and repetitive element to our exchange but I do not feel

that William is 'stuck' in any way, only that he wants me to enter into the play in a serious and focused way.

It is also important for the children to see and feel adults laughing and having fun with them. Mikey enjoys the fact that we can all laugh together when the bells fall off our heads in excerpt 4.

With Emilio, movement and drama were part of our musical exchanges right from the very beginning, as dramatic piano and vocal glissandi responses to his musical suggestions clearly motivated him to keep the exchanges going, (excerpt 1).

As Emilio responded well to dramatic types of exchanges I was able to use vocal phrases to accompany our shared cabassa playing and emphasise the excitement of our instruments connecting by ensuring that the connecting moment corresponded with the high point of the vocal phrase, (excerpt 4). Other young children with autistic spectrum disorder that I have worked with have responded well when I have pretended to go to sleep, or when I have pretended that my hand was stuck to the piano.

The playful nature of our exchanges as well as humorous teasing are apparent in the hiding game Emilio, his mother and I all three play together. (excerpt 6). Musical interactions combined with movements can very easily incorporate humour and drama, thereby once again adding to the repertoire of possibilities to communicate with children with autistic spectrum disorder.

3.2.4.10: Involving parents

As I explained at the end of section 1.6.7 in Chapter 1, it was Anna's account of our work with John that made me realise how important it was for primary carers to be part of the music therapy sessions with young children with autistic spectrum disorder.

In spite of the social difficulties that define the diagnosis of autistic spectrum disorder, there is evidence to suggest that young children form secure attachments with their caregivers, (Yirmiya and Sigman 2001) and it therefore seems logical to nurture this bond by treating the young child with their primary caregiver wherever possible. I will continue with some of the reasons why I think that mothers (or primary carers) should be included in music therapy sessions.

Many mothers enjoy being part of music therapy sessions because the work focuses on the things the child can do rather on the difficulties they may be experiencing. Many mothers will have spent at least two years of the child's life worrying about what the child was not doing and what could be wrong with their child. In some cases they will have gone from one medical practitioner to another always focussing on the delays, the odd behaviours and the child's difficulties. Although by the time I see the families they will usually already have been given a diagnosis, the children won't have been diagnosed for very long and many families might still be coming to terms with the implications of the diagnoses. Some families will have become so wrapped up in the intricacies of what is wrong with their child and the diagnostic procedure that they take some time to realise that I am not involved in assessing the child's difficulties, or in determining whether the child is on the autistic spectrum or not. For these families it is a refreshing change to focus on enjoying what their child can do.

Many mothers of children with autistic spectrum disorder need support and encouragement to allow themselves to have fun with their child. Because of the traumas they have experienced and the difficulties involved in communicating with their child, they particularly value the moments when they can play and laugh with their child, holding on to these moments through struggles at other moments in the week. Although Imogen's mother was a little shy about joining in at the beginning, it was wonderful to watch them both interacting freely together in excerpt 4. Similarly, it took a little time before Mikey was able to generalise the concept of watching the bells falling off my head to watching the bells fall off his mother's head (Mikey excerpt 4). Playing musical instruments with their children can be a very good way of putting mothers in touch with

their own need and ability to play. The mother's playfulness may easily have got lost when faced with a non-communicating baby and overwhelmed with anxiety about what was wrong with their child.

Seeing their child communicate with me through musical interactions will raise the parents' expectations of what their child can do. Knowing that their child can look up and take turns for example will mean that they will work hard to achieve this with their child in other settings and help that child to generalise skills acquired in music therapy sessions to other situations. Sometimes parents will pick up ideas of songs or musical activities to try out at home. Mikey's mother, for example often played the bell game with him at home, (excerpt 4) and Emilio's mother reported that he was hiding behind all the furniture in their house, (excerpt 6).

At other times parents will pick up on subtle new ways of communicating with their child from watching our sound exchanges. This is again clear with Mikey's mother who picked up on listening and waiting for her son in very sensitive ways in excerpt 5.

At times mothers will be exasperated by a difficult behaviour of their child such as a constant need to be in control or a constant need to be moving about the room. Sometimes the mothers and the children will be caught up in cycles of behaviours where the child is deliberately misbehaving in order to gain a negative response from the mother. In these cases I try to help the mothers focus on other positive aspects of their child and if possible attempt to turn an aspect of the difficult behaviour into something positive. For example, after Jamie's mother saw our movement exchange (excerpt 1) she was able to be more positive about her son's constant need to be on the move. Imogen's mother was proud to see her daughter leading the music with such enthusiasm from the drum (excerpt 2) and able to see a positive side to her daughter's need to be in control.

Some mothers can experience jealousy when they see their child communicating more readily with me through music than they feel they can communicate themselves. In these cases, I emphasise to the mothers that it is through the music-making that I am interacting

with the child and try to encourage the mothers to use songs or music themselves. I might also try to help the mothers to see the positive sides of their own relationship with their child. I try to generally support and encourage the mothers by helping them to feel better about their own abilities to be mothers and also by recognising how difficult it can be looking after a child with autistic spectrum disorder. Gradually, most parents understand that I am not competing with them in any way, and will trust me enough to allow themselves to play and be part of our shared sessions.

Over the past few years of working closely with mothers (or primary carers) and young children with autistic spectrum disorder it would seem that the mothers I see fit into four broad categories.
I will now outline these categories:

1) Mothers who are shy and hesitant to become involved.

My approach with these mothers is usually not to give many guidelines or instructions but to wait for the questions to come from the parents. I try to give lots of support to the mothers, emphasising their child's positive aspects and the role that the mother has played in enabling their child to show these positive sides. As soon as the mother does get involved in any way I will encourage them and support them as much as possible. In the end most parents will be 'drawn' in some way by watching their child's playful interactions.

2) Mothers who try to interact with their child but are unable to listen and tend to 'mis-match' musically, either imitating precisely what the child is doing and never offering their own ideas, or giving musical responses that bear no relationship to what the child has just played.

Again I will try to be as sensitive as possible here and certainly not criticise the mother's musical contributions. I could perhaps encourage the mother who only imitates, by saying how good she is at listening to her child but how she might also like to feel free to add

some of her own musical ideas. Conversely, to the mother who seems to be playing in a way unrelated to her child's playing, I might say how exciting it is to have 'new' musical contributions but that perhaps we could also pick up on the child's ideas. Generally, however, I think these mothers pick up ways of matching rather than mis-matching from watching me interact musically with their child.

3) Mothers who are over-involved and find it hard to let their child initiate any ideas themselves.

Situations with these families can be difficult because I sometimes have to decide whether to support the mother, or 'interrupt' musically to interact with and support the child. However, in most cases it is possible to do both. I try to praise and support the mother when she does wait and listen to her child, explaining how important this is, and emphasise how exciting it is that the child can make his or her own musical choices or initiate his or her own musical ideas. But I also make sure I don't forget to give as much support as possible to the mother for all the energy and commitment she is obviously putting into interacting with her child.

4) Mothers who are very supportive towards their child and appear not to be experiencing any difficulties.

These mothers are often full of enthusiasm and praise at the end of each music therapy session, which is of course exciting and encouraging for me. I try to help the mothers to see that the reason their child is able to be so engaged, or that the session is so positive, might well be partly because of *their* hard work and *their* commitment and dedication to their child. Sometimes these mothers have such a strong bond with their child that they take time to adjust to the fact that the child is strongly engaged with me through music making. With support, however, this is usually viewed in a positive light as the mothers will delight in seeing their child able to be involved with another adult.

It is interesting to note that when carrying out her research on music therapy with children with autistic spectrum disorder and their mothers, Warwick (1988) divided the eight mothers taking part into three broad categories. These corresponded with my categories '1', '4' and a combination of '2' and '3'. We both independently seem to have arrived at much the same conclusions.

Now that I have identified and described the key aspects of my music therapy approach with young children with autistic spectrum disorder and their parents, I will go on to describe and explain my music therapy diagnostic assessments at the Croft Unit for Child and Family Psychiatry.

3.3: Specific points about using Music Therapy Diagnostic Assessments (MTDA) at the Croft Unit for Child and Family Psychiatry

Since embarking upon my PhD investigation into the music therapy diagnostic procedures at the Croft I have published two articles related to this work, (Oldfield 2000 and, Carter and Oldfield 2002). Some of the writing which follows will be drawn from these articles.

3.3.1: The Croft Unit for Child and Family Psychiatry

The Croft Children's Unit is a psychiatric assessment centre for children up to the age of twelve and their families. There are usually no more than eight children attending at The Croft at any one time. In the last couple of years the most common diagnoses of children seen at the unit have been: Attention Deficit Disorder (with or without hyperactivity), Autistic spectrum disorders including Autism and Asperger Syndrome, Giles de la Tourette Syndrome, developmental delay, specific language disorders and conduct disorders. Although some families are admitted residentially, other children attend on a daily basis and regular meetings are arranged with the parents. Children are generally only admitted if their parents agree to work closely with staff on the unit. Assessments may last from two to six weeks. Occasionally, some children will attend

for a longer specific piece of work that might last from twelve weeks to six months. During the day the children attend a unit school in the morning. In the afternoon they attend various groups, such as social skills, art and recreation groups which are run by unit staff.

Staff on the unit include: psychiatrists, a family therapist, specialist nurses, a teacher, classroom assistants, health care assistants, clinical psychologists and music therapists. Social workers, health visitors and the teachers involved with the children outside the unit work closely with staff on the unit.

The strengths and difficulties of the children and the families admitted to the Croft are evaluated in different ways. The clinical psychologist carries out a number of psychological tests such as the PSI (Psychological Stress Index) which is used in the investigation described in Chapter 4, as well as other cognitive or developmental tests on the children such as the WISC (Wechsler Intelligence Scale for Children). Sometimes special questionnaires are devised by the clinical psychologist for different members of staff on the unit to fill in, particularly when we are trying to observe and understand children or families' difficulties that occur in unpredictable and erratic ways. Specially trained staff carry out ADOS and ADI tests (see Chapter 1 and 5). The teacher on the unit writes detailed reports not only on the academic strengths and weaknesses of the children but particularly on the children's abilities to learn and general behaviour in the classroom. Families will be interviewed, and observed in play sessions. In addition, staff assess the children and the families in less formal settings such as in the playground, at meal times and in the evenings, writing detailed notes in the families files on a daily basis. In some cases, detailed physical records of children's weight and height, as well as bowel movements and sleeping patterns are carefully monitored.

3.3.2: History of music therapy at the Croft

The part-time music therapy post at the Croft was first established in 1985. I took on the post in 1987. At that time the Unit was mainly a treatment centre which admitted children

for a minimum of six weeks but usually for three months to a year. Initially, my work involved mainly treating individual children, groups of children, families or groups of mothers and young children while liaising regularly with the team about the work that I was doing. Gradually, the Unit has become a diagnostic centre, mainly only admitting children and families for four weeks, although occasionally one or two families or children will be admitted for treatment for several months. I have, therefore, had to radically rethink and change my ways of working, adapting previous music therapy treatment methods to short term work (rarely more than four to six sessions) and to music therapy diagnostic assessments (two half hour individual sessions).

3.3.3: Description of the Music Therapy Diagnostic Assessments (MTDAs)

3.3.3.1 General points

The range of children who are assessed at the Croft is very wide. Children are referred to the Croft for very different reasons. The Croft may, for example, be asked to confirm a suspicion of ADHD, question a diagnoses of autistic spectrum disorder or assess a relationship between a parent and a child. The children's ages range from four to twelve years old.

The approach to the music therapy assessment obviously varies tremendously depending on each child and family. However, some patterns have emerged over the last few years, which will now be described. Although I do assessments for families, parents and children and also use a music therapy group for assessment purposes, in this investigation, I am going to focus only on the individual assessments for children.

The music therapy assessment sessions consist of two half-hour sessions which usually occur at the same time on two consecutive weeks. The staff at the Croft are well-informed about my work. Key workers will suggest which children they feel are priorities for music therapy assessments and provide me with basic information about the children and about why they have been referred to the Unit.

A time will be arranged for two music therapy assessment sessions and the child will be told about the sessions in a morning meeting when the children's timetable for that day is explained. I will introduce myself to the child when I go to collect him or her and we may 'chat' informally as we walk to the music therapy room.

In this investigation I focus on MTDAs for children where there is a possibility that they may be on the autistic spectrum. However, many of the points I make about the MTDAs are not only relevant to these children but also to children who are having MTDAs for other reasons (such as diagnosing ADHD or Giles de la Tourette Syndrome).

3.3.3.2 The room / equipment

The room is equipped with a piano, an electric organ, several guitars, and a wide range of percussion instruments. I also have a quarter-size violin and bring along my own clarinet. All the instruments are laid out on shelves or stand near the wall and are accessible to the children.
Two small chairs (child size) stand facing one another a little distance from the instruments. Two bigger chairs are in front of the piano. The floor is carpeted and there are a few pictures on the wall: drawings and collages obviously done by children. There is no other furniture except some more stacked up children's chairs. The room is friendly and spacious but has few distractions. The open shelves covered with instruments invite the child to take an interest in music-making. But there is also a sense of tidiness and organisation conveyed by the carefully set out chairs.

3.3.3.3 Structure of the session

The following is a description of the format I normally use. However, there will always be exceptions and I try to be flexible to meet the needs of each child so that I can create the optimum situation and setting to evaluate a child's strengths and weaknesses.

I invite the child to sit down on the chair facing me, and sit down opposite the child. I say something like: "here's a chair for you and I'll sit here", usually gesturing as I speak.

The session begins with a "hello song" that I sing to the child incorporating the child's name and accompanying myself by playing chords on the guitar. The session ends with a percussion duet on the bongo drums where I will sing "good bye" and make a clear ending. At some point, either at the beginning or at the end of the session, or as we are walking to or from the music therapy room, I explain the we are having two individual sessions together and remind the child of the time of the session on the following week.

In between the "hello" and the "good bye", I explain that we will take turns to choose what to do together. This structure is similar in some ways to the on/off approach that I describe in the section 'balance between following and initiating' in the first half of this chapter. At the Croft, this structure gives the children the freedom to choose and make their own decisions. If the process of choosing is too difficult or painful, the child can relax at the times when I provide him or her with my own choices and perhaps a reassuring structure. From the point of view of assessing the child's strengths and weaknesses, I can find out a great deal from the ways in which the child chooses instruments and activities in music therapy sessions. When it is my turn to choose I can set up situations and make suggestions that I feel will give me the maximum amount of information on the way the child is operating and thinking.

A complete list of activities included in the MTDAs investigated here is included in Appendix 5.20. Section 5.4.5 in Chapter 5 shows that I usually included 8 or 9 activities.

The structure of an assessment session could, therefore, take the following form:

- Hello song on the guitar
- Child's choice: child chooses the cabassa and gives me a maraca.
- My choice: free improvisation; child on drum and cymbal and I play the piano.
- Child's choice: child chooses piano, I suggest that I play the piano with the child

- My choice: a percussion dialogue; I place two slit drums on the floor and we each play them with two beaters.
- Child's choice: child chooses large bass xylophone, I listen and then join in.
- My choice: improvised story; child plays metallophone, drum and windchimes and I go to the piano and we make up a story together.
- Goodbye on the bongo drums.

I will now describe each of these headings and then explain what type of information I can gain from each of the musical interactions. I try to make sure that each of the activities described is included in at least one of the two music therapy assessment sessions. Some activities such as the Hello song, the Goodbye activity on the bongo drums and the free improvisation will usually be included in both sessions.

3.3.3.4 'Hello song'

The 'Hello song' is a gentle, lilting song in 3/4 time, which I sing to the child accompanying myself with chords on the guitar. I include the child's name in the song and will vary the style, speed and length of the song depending on the age of the child and on the way the child is responding to being sung to. I sit opposite the child singing directly to him or her, but again I may turn my chair slightly or face another direction if I sense that this direct contact is overwhelming or very uncomfortable for the child. If I feel that the child is acutely embarrassed, I may make the song very short and make a comment like: "it's a little strange being sung to like this, isn't it..?...We'll now move on."

This beginning has many functions. It establishes straight away that I am going to be actively involved in playing myself and am not just going to listen to the child performing to me. I can observe the emotional response (or lack of response) that the child may have to direct adult warmth and affection. The child may show embarrassment, pleasure, or may reject me by putting hands to his or her ears or turning away. Some children will find it difficult to listen to even a short song and want to get up and find

their own instrument or strum the strings while I'm playing. Other children will immediately want to inform me of past musical moments in their life or start fantasising about making up their own band. I can observe whether the child's emotional response seems usual or unusual and whether the child has particular difficulties listening or focusing.

3.3.3.5 The children's choices

After the 'Hello song' I stand up to put the guitar against the wall and I explain that we will take turns to choose what we do in this session. If I feel that the child needs direction I may then say that I will choose first. Otherwise I will ask the child "would you like to choose first?" Some children will be quite happy choosing an instrument for each of us and will be uninhibited about improvising freely with me.

Others will go enthusiastically to the piano, the guitar or the bass xylophone and then look bewildered and say: "but I don't know how to play". It may then be possible to demonstrate that we can improvise freely together, but some children will remain too worried about playing 'properly' to allow themselves to play freely in any way.

For some children, choosing in a musical context is associated with singing songs or learning to play a piece of music on the recorder and their first choice will be a particular song they want to sing or a piece they want to play on the recorder. If a child chooses to perform to me, I am quite happy to accompany a child singing a nursery rhyme or listen to a piece performed on the recorder. If this is the way the child chooses to start interacting with me musically I feel I can learn a lot from listening to them sing or play. The child is sharing a part of their musical past with me and this in itself may be revealing and interesting. Similarly, if a child chooses to learn a new piece on the piano or the xylophone I can discover how the child learns, how tolerant they are of their own mistakes, how realistic they are about the learning process and how easily and quickly they assimilate knew information.

Some children are unable to make choices at all and will say: "I don't know..... you choose". Depending on how anxious I sense that the child is at this point, I may be insistent on the child making a choice, I may help the child by saying: "OK, which of these two instruments do you think I might like best" or I may take over by saying: "Well....if you were able to choose I think you might want to choose this." If the child is clearly making a point of being defiant, or deciding not to conform, I might go to the piano and say: "you seem to be cross about being here, so I'll play some music myself and try to play in the way that I think you feel."

3.3.3.6 Free improvisation

I will place the drum and the cymbal in front of the child and then go to the piano. I usually leave time for the child to begin the playing but if the child is clearly waiting for me, I will start the playing. Some children will look bewildered and be concerned about 'how' they should play. In this case I might say something like: "you can play any way you like ..... let's see what happens". During the improvisation I will observe in detail how we are playing together. Because I am assessing the child's needs I will be challenging at times, stopping suddenly perhaps or deliberately changing the style of music we are playing in order to observe how the child reacts. At some point I will usually include pre-composed songs I think the child may have heard before, such as nursery rhymes or theme tunes from children's television programmes. I also try to take note of how the child's playing is making me feel. Do I feel excluded, excited, bored? Is the improvisation enjoyable?

Free improvisations are very useful to find out how a child communicates non-verbally. Does the child initiate ideas or simply copy my suggestions, or do we exchange ideas 'equally'? Do I get the impression that the child is trying to be in control or does he or she seem desperate for me to lead the activity? Do obsessive, repetitive patterns develop in the child's playing? Do I get the impression that the piece is 'stuck' and that we can't move on and be creative? Is the child able to enjoy playing freely, or do I feel that the child is getting through some sort of ordeal? Is the child able to listen as well as play?

Does the child appear confident or ill at ease? Does the child seem to be expressing feelings in his or her playing? Is the child able to be creative or imaginative?

Answers to all these questions will give me a good idea of how a child communicates non-verbally. Sometimes the patterns of communication will match up to and confirm what other staff on the Unit have noticed about a child's verbal communication. But I often notice aspects of communication that have not been observed by other members of staff. I also think that music therapy assessments sometimes enable me to find out about intricate patterns of communication more quickly than other staff can in different settings.

3.3.3.7 Percussion dialogues

Percussion dialogues, which could be on any combination of untuned instruments, allow me to confirm the answers to all the questions I was asking in the previous section. In addition I will be able to assess how easily a child shares an instrument and takes turns. I will also find out how playful a child can be and whether a child initiates games or is intent on 'catching me out'. In this more intimate improvisation I will be able to gauge how wary a child is and whether they are able to trust and enjoy being with an adult they do not know well.

As Daniel Stern remarked in a paper he gave at the 8th World Congress of Music Therapy in Hamburg in 1996, these types of exchanges are very similar to the types of babbling exchanges that take place between a mother and a young baby, (Stern 1996). For a variety of reasons many of the children that I see at the Croft may have missed out on these types of exchanges with their own mother and through percussion exchanges I can evaluate whether a child is able or willing to communicate in this way.

3.3.3.8 Improvised story

I place a number of large instruments such as the drum, the metallophone and the wind chimes in front of the child and then I go to the piano. We start playing together freely and then I say: "Let's make up a story.....once upon a time there was a ....." In many cases the child will complete my sentence and say "....a dog!" We improvise together and I say "....where did the dog go?" and the story evolves accompanied by both our improvisations.

Sometimes I have to encourage a child to get going by saying "was it a dog or a cat?" for example. If the child starts a well known story such as " Once upon a time there were three bears..." I might attempt to change things a little by saying something like: "....and they lived in a castle with a magician...." Although spontaneous story-telling could be assessed without the improvised music-making, the playing will often motivate a child and fuel his or her imagination. Acting out the story on the instruments makes the story more exciting and I can improvise on the piano to underline or contain emotions such as excitement, fear or happiness.

These improvised stories combined with music-making allow me to evaluate whether a child can make up a coherent story, whether a child allows me to contribute and whether the child is imaginative or gets stuck in obsessive repetitions or fixed story lines. The child will often become very involved in a story, and will show emotions that have not come to the fore in other settings on the Unit. Sometimes children indirectly share fears or worries with me in these stories that shed light on previously unknown traumas in a child's life.

3.3.3.9 Goodbye

The goodbye activity on the bongo drums allows me to "round" off the session. I can evaluate how the child deals with sharing an instrument with me and how he or she copes with close physical proximity. I will have another chance to observe the mother/baby

type of non-verbal exchanges mentioned previously. I will also be able to observe whether the child has difficulties with endings, both musical endings and the end of the session.

3.3.4 Feeding back to the rest of the team

It is obvious from the above description that there is no shortage of information to be gathered from the two diagnostic music therapy sessions. It is important for me to select those pieces of information, which will be of greatest interest to the team when feeding back in management meetings. I listen first to what the key-workers, the teacher and the other specialists think about a particular child and then I select those pieces of information from my music therapy sessions which seem to shed a new or different light on a child's strengths or weaknesses. In some cases, but in surprisingly few, my observations will confirm what the rest of the team think, in which case I may give a few examples of events which back up the opinions of my colleagues.

I have included vignettes of three children who were included in the outcome study described in Chapter 5 in Appendix 3.5. In these vignettes I have highlighted the role my assessments played in the diagnostic procedure at the Croft Children's Unit. All the names of the children have been changed.

3.4: Summary and Conclusion

In this chapter I have tried to describe and show the originality of my work, first with young children and their parents and second when doing music therapy diagnostic assessments.

In my work with young children with autistic spectrum disorder and their parents, I use a video to show excerpts of music therapy sessions and try to determine what is specific to my approach when working with children with autism. I identify eight points that I feel characterise my approach. These are:

- the fact that the music making motivates the child to become engaged;
- the importance of the structures that music therapy sessions provide the children with;
- the balance between following and initiating;
- the basic non-verbal exchanges that take place in music therapy sessions;
- the possibilities for experimenting with issues of control;
- the use of movement;
- the use of playfulness and drama;
- the fact that I involve parents in the work.

When describing my music therapy diagnostic assessments I try to show how music therapy sessions can be used for diagnostic purposes. Here, I focus more on the fact that music therapy is being used in a different way rather than relating my work specifically to children with autistic spectrum disorder. As I describe the different activities included in the Music Therapy Diagnostic Assessments (MTDAs) I explain what types of information I hope to gain from each of the musical interactions and how this information will be useful to the Croft Unit team in the diagnostic process.

In the next two chapters I will describe two outcome studies in each of these two clinical areas. In the last chapter I attempt to put the information from this chapter, the literature review and the two outcome studies, together.

Chapter 4 :: Child Development Centre Experimental Project

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4.5: Review of main findings in this chapter

4.1: Introduction

The overall aim of this study was to find out more about my own music therapy practice with children with autistic spectrum disorder. I felt that I was developing specific ways of working with this client group which I wanted to identify and explore. The approach I was using seemed to be successful not only for my own clients but also for other music therapists who had trained with me at Anglia Polytechnic University and were using all or some elements of the approach. I therefore thought it would be useful not only to define and identify this approach as I have done in the previous chapters in this thesis and in the video, but also to subject my work to more rigorous analysis.

To this effect, I set up two experimental research projects. The first investigation involved studying ten pre-school children with autistic spectrum disorder receiving weekly music therapy sessions at the Child Development Centre over a period of two school terms. This study will be described in this chapter. The second project involved comparing the results of music therapy diagnostic assessments with ADOS scores for thirty children attending the Croft Unit for Child and Family Psychiatry over a period of two years. This investigation will be described in Chapter 5.

The literature review in chapter 2 indicated that although there is a wide range of articles describing successful music therapy case studies and a number of articles outlining particular music therapy approaches in this field, there are relatively few experimental research investigations. The investigations that have been reported indicate that music therapy seems to be effective with children with autistic spectrum disorder, but that further research would be useful. Although there are some common points and overlaps between this research and previous projects, my study does not duplicate other work and is sufficiently different from previous research to warrant investigation.

In this project, I was interested in finding out more about my work with pre-school children with autistic spectrum disorder and their parents. I wanted to look at whether

changes were occurring in the children and whether there were similarities in these changes across the ten children I was studying.

The video that accompanies this thesis shows that I used my clarinet and playful movement in my work. I was therefore interested in finding out how I distributed my time playing different instruments and moving in the music therapy sessions, and how this varied across the ten children. As so much of my work relies on spontaneous, intuitive musical improvisations, I felt it would be useful to use the video analyses to look more objectively at what I was doing with the different children.

In addition, I was interested in looking at how the parents benefited from being in the music therapy sessions with the children. The literature review showed how the behaviours of parents and children affect one another and I also felt that parents of pre-school children with autistic spectrum disorder were in particular need of support and encouragement. I therefore wanted to use the video analyses to look at whether the patterns of communication between the parent and the child changed during treatment and what these changes seemed to be associated with. I was interested to find out whether there were similarities and differences between the ways the ten different parents related to their children. I was also curious about how the parents felt about their children and whether these feelings changed in any way as a result of the music therapy intervention.

In my research investigation with ten pre-school children with autistic spectrum and their parents, my main research hypotheses were that:

- Progress towards achieving identified aims for each of the children could be identified over a period of 18 to 26 weeks.
- Across the ten children, it would become clear that music therapy was effective at achieving some aims, and less effective at achieving other aims.
- Patterns showing how progress is achieved over time will become clear.
- Parents' patterns of interactions with their children, or perceptions of their children may change during the course of treatment.

In this chapter, I will outline how the project was set up. In the methodology section I will explain why we chose a single subject experimental design, how we set treatment objectives and how we used music therapy reports, interviews, video-analyses and questionnaires to measure our results. Results of the investigation follow and are analysed.

To maintain confidentiality I have used the children's first initial (and sometimes first two initials) and have always referred to the parents as individual children's 'Mum' or 'Dad'. However, when I refer to the video I have used the children's full first name, as their name is used in the videotaped sessions. All the families gave written consent for this material to be used in the thesis and on the video.

4.2: Background

4.2.1: How the project was set up

I drew up an initial plan, explaining which and how many children I would investigate and what methods I would use to gather data. Malcolm Adams, clinical psychologist, acted as research consultant for this investigation. This plan was then discussed with the consultant neurological paediatrician at the Child Development Centre who was very encouraging and supported the project. We then appointed the music therapist, Emma Carter to work as a research assistant and to replace some of my clinical hours in order to allow me time to carry out the research. It was agreed that she would interview the parents, videotape all the sessions and analyse the videotapes. It was felt that it was important for an independent person other than myself to interview the parents and analyse the videos.

4.2.2: Ethical approval

In July 2000, before starting on this research investigation, I sent completed application forms, a five-page description of the proposed investigation and suggested consent forms

and research information for parents to the Cambridge Local Research Ethics Committee. Consent forms and information sheets are included in Appendix 4.1 and 4.2. With one of the families who was not fluent in English, we employed an interpreter to explain these forms to the parents.

At the end of July 2000, the Cambridge Local Research Ethics Committee replied, approving the project (see Appendix 4.3).

4.3: Methodology

4.3.1: Overview of the study design

Ten pre-school children on the autistic spectrum who were referred to me for music therapy treatment at the Child Development Centre, Addenbrookes, were investigated. This number of children was chosen because it was a realistic number of children to investigate within the two year time span allocated for experimental work, and also because by studying ten children I was able to compare how different children with similar aims progressed and to evaluate what particular aims music therapy was effective at achieving.

It was hypothesised that progress towards achieving aims could be identified over a period of 18 to 26 weeks, and that patterns would emerge over time regarding which types of aims music therapy was particularly effective for and how progress was achieved with the ten children investigated. It was also hypothesised that parent's behaviour during the sessions, and their perceptions of their children might change during the course of treatment.

Each child received 18 to 26 weekly individual music therapy sessions (corresponding to two school terms) with their parent or carer in the room. Each of the sessions, as well as the ten-minute review of the session with the parent or carer immediately after the music therapy intervention, was video-taped, and the videos were subjected to analysis. The

parents were also interviewed before and after treatment and completed a detailed questionnaire to determine how they felt their child was functioning as well as to establish whether their perception of their child had changed during the treatment.

4.3.2: The choice of the research design

In this project I decided to focus purely on the music therapy sessions rather than attempting to compare music therapy sessions to another therapeutic approach. This was partly because of the difficulty involved in matching pre-school children with autistic spectrum disorder with an appropriate control group and also because of the difficulty of finding any on-going individual therapy that these children might be involved in on a weekly basis that I could compare music therapy sessions with. Although the lack of a control group means that my results are weakened because progress in the children could be attributed to maturation, my main focus in this study was to find out more about my work rather than to 'prove' that music therapy was effective. One of the strengths of this design was that I was able to look at which particular aims were being met for individual children because it was possible to compare progress on different aims. In addition, because I was studying ten children and their parents, I was able to look at which aims music therapy was particularly successful at achieving, across the ten children.

Another important consideration was to use a system, which enabled me to analyse the work I was doing, as it was being practised, rather than modifying the work for the purposes of the research. This was the same consideration that I had had when setting up my two previous music therapy research projects and I was therefore able to use methodologies that I had used in my two previous research projects, (Oldfield and Adams 1995; Oldfield, Bunce and Adams, 2003). The research design I used here, as in my previous investigations, was a series of Single Subject Experimental Designs (Kazdin, 1982; Morley and Adams, 1989).

As I mentioned in Chapter 1, the design I used was not a traditional Single Case Design where base line observations are made, treatment is applied and then changes are

evaluated; this original Single Case Design Model was designed for clinical interventions where sudden marked changes occur (Kazdin 1982). In my work with pre-school children with autistic spectrum disorder, I was not expecting sudden marked changes but was hoping for gradual slow and progressive changes and I therefore gathered information by making many repeated measurements of each session. It could be argued that the research design would have been strengthened by adding a base line period. Nevertheless it is not clear what activities it would have been appropriate to use for all ten children across the baseline period.

All the sessions were videotaped and then analysed by the research assistant, using a five-second sampling system developed in my previous research projects. Five-second samples were used because some of the children only responded in small ways and it was felt that if longer time samples had been used important responses might have been missed. In fact the analysis showed that many of the recorded behaviours occurred across consecutive five-second intervals, indicating that this interval was short enough to capture important aspects of the children's behaviour.

The research assistant did not start analysing videotapes until treatment on a particular child was complete and she didn't feed back her results to me until all the experimental work had been completed. These detailed observations of every single session meant that I could get an objective view of what was occurring in the music therapy sessions, as well as evaluating the parents' feedback, which occurred after every session.

In addition, the parents were interviewed and they completed questionnaires before and after the treatment, providing us with additional data, to supplement the information obtained from the video analyses.

4.3.3: The children

Over the years, I have worked with a wide range of children with autistic spectrum disorder, of different ages and different levels of abilities. Sometimes, I have treated

children on their own, sometimes, with their parents or carers and sometimes in groups. The length of time I have worked with the children has also varied from a few weeks to several years of weekly sessions.

In this project, I decided to investigate pre-school children with autistic spectrum disorder who I saw individually with their parents over a period of 18 to 24 weeks (corresponding to two school terms). This decision was taken because, while most children with autistic spectrum disorder seem to benefit from music therapy treatment, early intervention may be the most effective time to set up healthy patterns of communication. These patterns need to be explored and shared with parents who would naturally be in attendance with very young children. The parents themselves also often particularly benefit from support and encouragement at this time. From my clinical experience it appears that, at this age, two terms is usually enough time to enable changes to occur which will hopefully then help the child into nursery, primary school or special education.

Over a period of twenty-six months, ten pre-school children (under four) with autistic spectrum disorder who were referred to music therapy at the Child Development Centre were included in the investigation. After the first two music therapy assessment sessions, which aimed to determine that the child would benefit from further music therapy treatment, I invited the mother (or primary carer) to participate in the study. I explained about project, gave her an information sheet, and asked her to sign a consent form. (Appendix 4.1 and 4.2). In this way I had a consecutive cohort of children.

Thus the criteria for taking part in the investigation were that:

- the child was referred to me for music therapy treatment at the Child Development Centre;
- the initial music therapy assessment indicated that the child and the parent would benefit from regular individual music therapy treatment;
- the child was on the autistic spectrum;
- the child was of pre-school age;
- the family agreed to take part in the investigation.

No families who met these criteria were excluded from the project.

During this twenty-six month period a total of twelve pre-school children with autistic spectrum disorder were referred to music therapy. Only one of these children was not considered suitable for music therapy, so all other eleven children referred were included in the project. One of these eleven children left the area after only four treatment sessions and was replaced by another child. The child who we felt would not benefit from music therapy treatment was extremely anxious when he came into the treatment room, and showed no curiosity or interest in any of the instruments and had no reactions to musical sounds or changes. I felt that it would be quite traumatic for this child and his mother to continue with music therapy sessions and that other approaches would probably be more successful.

From previous clinical experience, this ratio of one child in eleven not being suitable for music therapy treatment seems fairly representative. I would usually only expect about one in ten referrals to music therapy not to be considered suitable for treatment.

Although all the children referred to me already had a diagnosis of autistic spectrum disorder, each of the experimental subjects received an ADOS test (Autistic Diagnostic Observation Schedule) before taking part in the study. This was to ensure that a common diagnostic procedure had been used for each of the children. Some of the children had learning difficulties and others did not, but all of the children scored as being on the autistic spectrum disorder.

The children were all between the ages of two and four. The youngest was two years and five months old when he started music therapy sessions and the oldest was four years and one month old. The average age of the children when starting music therapy sessions was three years and six months old.

Nine of the children were boys and one was a girl. A parent was present for each of the sessions with all of the children except for one child whose mother only attended every

two weeks because she had to look after a younger sibling on alternate weeks. Nine of the parents were the mothers of the child, one child came with his father. On a few occasions, when the 'usual' parent wasn't available, the other parent replaced them. The children were usually aware of the change, but not distressed or unduly disturbed in any way. Occasionally, grandparents, other relatives or close friends of the families observed sessions, in addition to the main carer, when the parents requested this and when we felt this would not be disruptive to the session.

Table 4.1 summarises some of the details about the children and the families involved in the project.

Table 4.1: Description of the Child Development Centre Project children

Children	Sex	Age at start of treatment	Total number of sessions	Family circumstances	People present with child	Siblings	Other information
W	M	3y 11m	24	Mum and Dad	Mum, for 15 out of 24 sessions	One older brother, plus a younger brother also with ASD	Mum was looking after W's brother in another group at CDC on 9 occasions
J	M	3y 5m	25	Mum and Dad	Mum	One older sister	
Mi	M	2y 5m	24	Single Mum	Mum	Older sister with Aspergers	
I	F	3y 3m	20	Mum and Dad	Mum	Older sister	
Ma	M	3y 9m	18	Mum and Dad	Dad every week, on one occasion Mum also attended	No siblings	Dad's command of English was patchy. Communication was not always straightforward
E	M	3y 8m	20	Mum and Dad	Mum	Two older brothers	
R	M	4y 1m	26	Mum and Dad	Mum	One twin brother and two older sisters	
M	M	3y 3m	22	Mum and Dad	Mum	One older sister	
H	M	3y 5m	21	Single Mum	Mum on all but one occasion when Dad attended	No siblings	Parents estranged but Dad involved in some of the caring.
B	M	3y 5m	22	Mum and Dad	Mum on 20 occasions, Dad on 2, both plus new baby on 1.	Baby brother born during treatment.	

All of the children had had two music therapy assessment sessions with me before starting treatment. None of them had received music therapy treatment before the project started. Three of the children attended a general music group for mothers and toddlers or

for nursery children in Cambridge at the same time as having music therapy sessions. The two types of musical interventions were fundamentally different. The music groups catered for at least six children and their parents and consisted mainly of pre-composed songs and games. The children mostly joined in by singing, clapping or tapping percussion instruments, often with help from their parent. These groups were so different to the music therapy sessions that I did not feel that it was in any way confusing or difficult for the children or the parents to be engaged in two musical experiences at the same time. Nor did I feel that the children who attended the music groups were 'at an advantage' and more likely to benefit from music therapy treatment than those who were not attending the groups. All the children had different experiences while they attended music therapy sessions all of which will have contributed to their progress. Some of the younger children were still mainly at home with their parents. Other children were attending a nursery or special school on a part-time basis.

Most of the children had attended, or were still attending, a multidisciplinary fortnightly playgroup for children with autistic spectrum disorder and their parents. This group was also run at the Child Development Centre by the clinical psychologist and the speech therapist, on the same morning that I worked there. As a result, some children would attend both the group and individual music therapy sessions, one week, and music therapy sessions only, the next week. The advantage of this system was that most of the children were familiar with the building before music therapy treatment began. The disadvantage was that some children took a few sessions to get used to coming to a different room for music therapy sessions, instead of the play-room they were used to. Surprisingly, the fact that arrangements were not the same every week did not seem to upset the children.

4.3.4: The setting of the aims

After the two music therapy assessment sessions, I discussed with each parent what they felt the particular needs of their child were. Together, we then determined objectives for each of the children. These aims were based on:

- the parents knowledge of the child;
- the results of the two music therapy assessment sessions;
- my previous experience of children with similar strengths difficulties;
- the initial music therapy referral letter.

As the music therapy reports in the appendix attached to this chapter show, the aims were worded slightly differently for each child. However, in the Table 4.2, I have tried to list all the aims for the children by grouping them under general headings on the left of the table.

Table 4.2: Aims for the children

Aims	Children									
Increase general involvement		J	Mi					M	H	
Increase concentration		J	Mi	I			R		H	
Increase free spontaneous play					Ma	E		M	H	B
Increase any communicative efforts			Mi				R		H	
Increase interactions / exchanges / dialogues	W	J		I	Ma	E	R	M	H	B
Increase turn taking	W	J		I	Ma	E		M		B
Increase interactions with Mum or Dad			Mi	I	Ma	E			H	B
Increase eye contact		J							H	
Increase vocalisations	W	J	Mi		Ma				H	B
Increase words	W				Ma					B
Increase tolerance of direction	W	J		I		E		M	H	
Discourage child from drawing adults into conflicts with the child				I			R	M		
Support Mum or Dad's interactions							R			
Help Mum or Dad to listen / follow					Ma					

This table shows that some aims were shared amongst many children, whereas others were more specific to individual children. 'Increase interactions / exchanges / dialogues', for example, was an aim for all the children except Mi. Mi was a year younger than the other children, and very withdrawn and isolated, and the aim for him was simply to 'increase any communicative' efforts on his part.

Some of the aims were linked to the children's levels of ability. 'I' and 'E' who were already using words when treatment began, did not need to be encouraged to vocalise or use words. Other aims such as 'increase tolerance of direction' or 'discourage child from drawing adults into conflicts with the child' were associated with particular areas of difficulty that some of the children were experiencing.

It is interesting, but not surprising given the nature of autism, that most of the aims are connected with helping the children to communicate.

4.3.5: Videotaping the sessions

The music therapy research assistant Emma Carter, videoed almost all the music therapy sessions and the verbal reviews that I had with the parents after every session. On three mornings, (out of a total of around 70) another member of staff stepped in to be behind the camera when the research assistant was unavailable.

Although the children were aware of the camera, I do not think they were in any way inhibited by the fact that the camera was there. The research assistant would sometimes change position and the children would look up at her, but she was quiet and unobtrusive and I never felt that the camera was a major distraction.

Some of the parents were a little inhibited by the camera at first, but when we talked openly about this and I attempted to reassure the parents, the initial unease was usually quickly dispelled.

In my research with groups of profoundly learning disabled adults we found that I was affected by the video camera in that I gave more attention to the person being filmed than to other people in the group. (Oldfield and Adams 1995). In the present project, I think the camera made me work as hard as I could and be very focused. However, as the camera was there in all of my experimental work and was constantly focused on the individual child and parent I was working with, it did not affect my results.

4.3.6: Video analysis

Once treatment with a particular child was over, the music therapy research assistant was able to start analysing the videotapes of that particular child. She analysed the videos in random order, so that her possible expectations of progress would not influence her results. She analysed a total of 222 videos, which took her around 200 hours. Given the large numbers of videos and the huge amount of time spent analysing the videos, it is unlikely that she would have remembered details of sessions she had previously videod sufficiently well to allow her possible expectations of progress to influence her results.

The video analysis system she used was the one that had been developed for my two previous music therapy research projects. (Oldfield and Adams 1995; Oldfield, Bunce and Adams, 2003).

For each of the children, the treatment objectives were translated into observable behaviours that could be counted and timed. These codes were then marked down in a time grid where every square represented five seconds. Important behaviours by the parents as well as by myself were also coded in a separate row of five-second time grids. As the treatment objectives varied for each parent and child, the codes used for each dyad were different. Before starting analyses on a 'new' child the music therapy research assistant would meet with me to determine exactly what she should be looking out for and work out which codes she should use.

I was aware that with only one camera some aims such as 'increasing eye contact' would not be possible to measure in a reliable way. Similarly, it was not possible to gage the child's eye direction towards myself or the parent as we all moved around and all three people were not always in the picture. However, I felt that there were enough behaviours that we could measure to be able to get some idea of how the child and the parent were progressing in the sessions.

Table 4.1 shows all the codes used across the ten children and which codes were used for each child. I have also included this table in Appendix 4.4 (table Ap.4.1) so the reader can refer to that table when consulting tables in the Appendix section.

Table 4.3: Video analysis codes for the ten children

Codes	Explanation of codes	Children for whom codes were used									
E	Engaged	W	J	Mi	I	Ma	E	R	M	H	B
Ex	Engaged with instrument / choosing	W	J	Mi	I	Ma	E	R	M	H	
I	Initiating						E				B
M	Active music making	W	J	Mi	I	Ma	E	R	M	H	B
Mx	Playing with help		J	Mi				R	M	H	
V	Vocalising spontaneously	W	J	Mi	I	Ma	E	R	M	H	B
W	Using words	W			I	Ma					
Ts or Ti	Talks spontaneously						E				B
P or Mo	Moves playfully	W	J	Mi	I	Ma	E	R	M	H	B
S	Sings song	W						R	M		
Sm	Smiles									H	
R	Rejects / resists				I	Ma	E			H	
N	Negative behaviour	W	J	Mi	I	Ma	E	R	M	H	B
C	Crying			Mi							
Ve	Vocalises echolalically										B
Te	Talks echolalically						E				B
T	Goes to toilet										B
Im	Interacts with Mum	W	J	Mi	I		E	R	M	H	B
Id	Interacts with Dad					Ma					B
Ra	Responds to A.(music therapist)					Ma	E				B
Rm	Responds to Mum						E				B
Rd	Responds to Dad					Ma					B
Pc	Physical contact with Mum								M		
Os	Out of shot	W	J	Mi	I	Ma	E	R	M	H	B
B	Blank	W	J	Mi	I	Ma	E	R	M	H	B
Av	A. vocalises	W	J	Mi	I	Ma	E	R	M	H	B
Ao	A. plays 'other' instruments	W	J	Mi	I	Ma	E	R	M	H	B
Ap	A. plays piano	W	J	Mi	I	Ma	E	R	M	H	B
Ac	A. plays clarinet	W	J	Mi	I	Ma	E	R	M	H	B
As	A. sings song	W	J	Mi	I	Ma	E	R	M	H	B
Apl	A. moves playfully	W	J	Mi	I	Ma	E	R	M	H	B
Ae	A. attempts to engage	W	J	Mi	I	Ma	E	R	M	H	B
Af	A. follows	W	J	Mi	I	Ma	E	R	M	H	B
Ab	A. blank or out of shot	W	J	Mi	I	Ma	E	R	M	H	B
Mae or Mi	Mum attempt to engage / initiates	W	J	Mi	I		E	R	M	H	B
Mp	Mum plays	W		Mi	I	Ma	E	R	M	H	B

Ms	Mum sings	W								H	
Mf	Mum follows			Mi	I		E				B
Mt	Mum talks						E				
Mpl	Mum moves playfully				I						
Dae or Di	Dad attempts to engage / initiates					Ma				H	B
Dp	Dad plays					Ma				H	B
Df	Dad follows					Ma					B
Ds	Dad sings									H	
Dt	Dad talks					Ma					
Tb	Total boxes	W	J	Mi	I	Ma	E	R	M	H	B

Most of the codes used are self-explanatory. Those that could be interpreted in different ways such as E (engaged) and N (negative behaviour) are defined on p.160.

This table shows that while some codes, particularly those relating to the music therapist, were similar across all the children, many other codes where only used for some of the children depending on what the specific aims for each child were. For those children with large amounts of codes such as B. and E. the music therapy research assistant usually had to view the videos several times in order to collect all the necessary information.

To help her to keep track of time as she watched the video, the music therapy research assistant used an electronic metronome set at five beats to the bar, where a beat occurred every second. On every fifth beat a bell would sound indicating that she needed to move on to the next grid. The use of the metronome to help with video-analysis was developed by Bunce in my previous music therapy project with mothers and young children and had previously been a reliable and accurate way to gather data, (Oldfield, Bunce and Adams, 2003). The video analysis started at the same time for every child, on the 'lo' part of the first 'hello' in the music therapist's greeting song.

Examples of two video analysis forms used to analyse Mi and E are included in Appendix 4.5. The shaded areas in the forms correspond with the video excerpts, Mi excerpt 5 (child one on the video) and E excerpt 1 (child five on the video), in the video that accompanies this thesis.

After the research assistant had analysed around fifteen videotapes the research consultant, Malcolm Adams, checked three different videotapes chosen at random to confirm agreement on the consistent use of the codes. After all the videotapes had been analysed he randomly analysed two videotapes and found that he agreed with her results, indicating that her analyses had been reliable. Because of the experience gained using these methods in two previous investigations (Oldfield and Adams 1990, and Oldfield *et al* 2003) and also because of lack of time, it was not felt necessary to check inter-observer reliability in a more formal way.

The video analysis system developed by Plahl (2000) which she has called 'Kamuthe', has some similarities with the system I use here. However, her very detailed coding system is the same for all the children she analyses and is not tailored to the individual aims of the children. In her research project, she only analyses the first and the last five minutes of every thirty minute session. It is interesting to note that even though Plahl was able to use a computer programme to help with the video analyses, she still found that each minute she analysed took thirty minutes to complete. Although the music therapy research assistant did have to take additional time at the start of each new child to practise using the new codes, she then found that she could analyse each half-hour tape in one to one and a half hours.

Burford (1988) used video analyses to look at repetitive movements of children with profound learning disabilities and their carers. Recordings were made via a two camera system. The videos were analysed using an electronic time counter inserted on the screen to record real time to 1/100 second and frame by frame analysis. Unfortunately, this system would not have been viable for our analyses as we were trying to observe many different behaviours both for individual children and across the ten different experimental subjects. It was also unnecessary for us to time the behaviours we were analysing as accurately as in Burford's study.

4.3.7: Interpreting the video analysis data

Once the music therapy research assistant had analysed all the videotapes, she and I counted all the codes for the children and the parents. This counting was very time consuming and took around half an hour per video. This meant that a total of around 110 hours was spent counting codes. We experimented with various systems to see whether we could save time. Appendix 4.6 shows one system that worked quite well.
These figures were then converted to percentages of total time codes recorded in each session in order to take account of the fact that each session varied in length. The percentages were subjected to statistical analysis. In addition to descriptive statistics showing means and highest and lowest scores, I used Kendall's non-parametric correlation test. This test is recommended as being appropriate for this type of data by Morley and Adams (1991). It explores whether there is a trend over time (increase or decrease across sessions) in the behavioural scores. I typed all the figures into the Statistical Package for Social Sciences, (SPSS version 11.0) computer programme and was then able to subject the data to statistical analysis.

Graphs and pie charts were then used to illustrate the results. I used graphs to show the changes in the children and the parents behaviours' over time. I illustrated all the children's levels of engagement and amount of play in graphs as these were two aspects I was interested in across the ten children. In addition, I illustrated any of the behaviours where there were significant changes. This meant that for some children like B, I included a large number of graphs, but for other children like H, I only included a small amount of graphs. The pie charts were used to illustrate how I used my time in the sessions. When looking at my own behaviours I was more interested in how much time I spent playing different instruments than the patterns of my playing habits over time.

In addition to counting up total numbers of each of the codes, I also counted up the length of some of the children's playing bouts in order to find out whether the amount of time children could focus on any one activity increased or decreased. I looked at the mean length of the playing bouts and the longest playing bouts for each of the sessions.

For the children and the parents I focused on how each of the behaviours we counted changed over time, because one of my hypotheses had been that I would be able to see such changes. When looking at the data on my behaviour in the sessions, I looked at mean percentages in order to get an idea of how I distributed my time and how this varied across the ten children.

When I first set up this investigation, I had also hoped to be able to look in detail at how what I did as a music therapist in the session affected the child's responses. Unfortunately, because of the huge amount of data we had to analyse I did not have time to do this. This meant that some aims such as ' increasing turn taking' or 'encouraging imitation' could not be evaluated specifically in this thesis. However, in the future, the clinical psychologist, Malcolm Adams, and I, hope to find some more funding to enter all the video analysis data (and not just total codes and length of bouts as we have done at present) into the computer. We would then aim to devise a special computer programme to analyse how each of the children's individual actions correlated with my actions, or those of their parents.

4.3.8: Structured interviews

The aims of the two structured interviews were to determine how the parent perceived their child and what the parent thought about music therapy. The music therapy research assistant conducted all the semi-structured interviews and it was explained to the parents that I would not have access to this information until after their treatment had ended. This was to try and ensure that the parents did not feel (consciously or unconsciously) that they had to say the right things to ensure that their child received good treatment.

In the initial interview, I wanted to find out:

- what the parent hoped music therapy would achieve for their child;
- what they felt their child would get out of the sessions;
- what they hoped to get out of the sessions themselves.

This initial interview was conducted after each family had had two music therapy assessment sessions and it had been agreed that they would benefit from music therapy treatment. This meant that the parents had already seen their child in music therapy sessions and could have some idea of what to expect in the future. The pre-treatment semi-structured interviews were arranged to take place straight after the ADOS test (see section 4.3.3 earlier in this chapter) to save the families an extra appointment. This meant that the research assistant could 'lead' the parent into questions about their child by referring to the ADOS test, which had just occurred. Guidelines for the pre-treatment semi-structured interview are included in Appendix 4.7.

In the interview after the treatment, I wanted to know whether the parent's view about their child had changed in any way, their general view of the music therapy treatment and what progress they felt their child had made. The main areas covered were:

- generally inviting the parent to comment on how the music therapy sessions had progressed and what their impressions were;
- whether the parents initial expectations had been met. If appropriate the music therapy research assistant would remind the parents of what they had said in the initial semi-structured interview.

The music therapy research assistant took notes after every semi-structured interview and each of the interviews was also audio taped.

Some of the questions asked are similar to those asked in Plahl's semi-structured interview, (Plahl 2000). However, she focussed less on how the mother's perception of the child might have changed and did not have individual treatment objectives for each child.

4.3.9: PSI Forms

The Parenting Stress Index is a psychological multiple choice test developed by R. Abidin, in the U.S.A., over a period of twenty five years, (Abidin 1995). It looks at levels of stress parents are experiencing by asking questions relating to how they are experiencing their own children and how they feel themselves. The two sets of questions are grouped in 'child domain' questions and 'parent domain' questions and figures from the two areas are then added together to give an indication of the 'total stress' experienced by the parent. The professional manual that comes with the tests explains very clearly how the results of the questionnaires should be worked out and interpreted. (Abidin 1995).

When she conducted the semi-structured interviews before and after treatment, the music therapy research assistant explained about the PSI and gave the parents the questionnaires to fill in at home. She made sure the pre-treatment questionnaires were returned during the first few music therapy sessions and we provided a stamped addressed envelope for the post-treatment questionnaires to be returned to us.

4.4: Results of the study

In this study was that I was able to gather different types of data on each child and parent. I will now consider the results across the ten families. I will look at:

- the music therapy reports;
- the video-analysis;
- the semi-structured interviews;
- the PSIs.

I will then draw together all the information for each family.

4.4.1: The music therapy reports

The families' full music therapy reports are included in appendix 4.8. I have drawn out a few salient points from each report to give the reader an impression of the progress made by each of the families. These reports are based on my opinions and impressions. This is why I refer to how I felt the children were progressing, in contrast to the results from the video analysis where the data was less subjective.

W's report indicated that he made good progress during his music therapy sessions. His communication skills particularly seemed to have improved. However, I did remark that his behaviour was often unpredictable and very dependent on the mood he was in on any particular occasion. Although he missed his Mum when she wasn't there, he did not seem too distressed that she was not present for quite a number of his sessions. His Mum enjoyed playing and singing with him when she was able to be present.

J showed an interest in musical exchanges with me right from the beginning. Much of the work we did was to intensify our communication and to improve the quality of our exchanges. In general, I thought that he made good progress. He continued to thoroughly enjoy communicating with both me and his mother through playful sound exchanges. I felt that his vocalisations and words had increased and that his concentration had improved.

Mi was ten months to a year younger than the other children in this project. He was very isolated and my aims were to draw him out of his isolation and help him to be involved in some playing or communicating with me or his mother. I felt he made progress in these areas and was particularly pleased that he and his mother were able to enjoy some basic interactive music-making in the sessions.

'I's report indicated that she made progress in most areas during her music therapy sessions. Although she still struggled to accept direction she gradually was able to conform to the structure of the session. She was creative and inventive and many

interactive musical games involving 'I', her mother and myself evolved. As sessions progressed, she seemed to become more communicative and playful, using more words and pretend play.

Both *Ma* and his father were very active in the music therapy sessions and enjoyed playing anything on offer for long periods of time. As sessions progressed, Ma became slightly less 'lost' in his own playing. I felt that his communication gradually became more spontaneous and that his vocalisations and words increased. Ma's father was often involved with Ma, usually playing simultaneously with his son. As the weeks went by he seemed to take a little more of a supportive role, not playing quite so much and listening more to Ma.

E's report made it clear that a lot of the work with E focused on increasing E's tolerance of adult direction and helping his musical interactions and his communication generally to be less rigid and more spontaneous. He particularly enjoyed playful musical exchanges with his mother and me, which involved drama and changes of leadership. In general the report indicated that E made good progress although he went through a 'rebellious' phase for four weeks shortly after the work began.

R's report was positive and indicated that he made considerable progress during music therapy sessions. I commented that the work was 'child-centred' and that I often had to follow what R did as he wandered around the room, in order to get his attention.

For M, I reported that he had very intense and sometimes emotional reactions in the music therapy sessions. He could become very engaged and involved but his behaviour was unpredictable and his moods would often quickly fluctuate from one extreme to the other.

H's report indicated that he enjoyed the music therapy sessions, sometimes 'losing' himself in his playing. His levels of engagement seemed to vary from week to week but I felt that music therapy was a good way to gain his attention and interest.

B's report showed that although he was shy and tentative at first he gradually 'came out of himself' and became more and more playful, spontaneous and interactive. His concentration improved and he used more and more vocalisations and then words.
All these music therapy reports were positive, indicating either that the children and/or the parents clearly enjoyed music making or that real progress had been achieved. With all the children I felt that some, if not all my original aims had been partly or completely achieved. I thought that all the parents were supportive of their children in the sessions.

For some children I recommended further individual music therapy sessions, if possible at the school they were about to start attending. For others, I suggested that they might be ready for group music therapy sessions. For a few, I felt that any type of music group for young children or even music lessons (when they were a little older) might be beneficial.

It would appear from these ten reports that my music therapy approach was generally successful particularly as the ten families were not singled out for the research investigation and were representative of my general case load. I will now look at the video analyses of the music therapy sessions.

4.4.2: The video analysis

The video analysis codes, the percentage figures drawn from these codes in the video-analysis, the figures describing the children's playing bouts and the statistical analysis of these figures are included in Appendix 4.9, family by family.

Most of the children's codes are self explanatory. However 'engaged' (E) or 'negative' (N) need to be defined. 'Engaged' meant that the child was in some way being communicative, looking up or gesturing *to* the music therapist. For three of the children (Ma, E and B), I made a distinction between 'engaged' and 'responding to Amelia' because I was particularly interested in these children's spontaneous communication as well as the responses to my attempts to communicate with them. For the other children any communicative attempt with me came under the category 'engaged'.

'Negative' behaviours were when a child clearly rebelled, pushed something away or screamed in a cross way, but not when a child withdrew quietly. When the research assistant was in any doubt about interpreting a behaviour, she did not score.
The fact that these behaviours were grouped together and coded as 'Negative' did not mean that the process of being angry was considered as being undesirable. It is recognised that expressing anger may well be part of the therapeutic process. I felt that it would be useful to see how frequent these particular behaviours were and when they occurred.

The following table 4.3 shows the significant changes in behaviour across the ten dyads.

Table 4.4: Statistically significant behaviour changes across the ten dyads

	Children									
Codes	W	J	Mi	I	Ma	E	R	M	H	B
Pe (or peadj)	S+	NS	S+	NS	NS	NS	S+	NS	NS	S+
Pex	NS	NS	NS	NS	NS	NS	NS	NS	NS	
Pm	S-	NS	NS	S-	S+	NS	NS	S-	NS	S-
Pmx		NS	S+				NS		NS	
Pi						NS				S+
Pp (or pmo)	NS	S-	NS	NS	NS	NS	NS	S-		S+
Psm									NS	
Ppc								S+		
Pve										S-
Pv	NS	NS	NS	NS	NS		NS		NS	S+
Pte						S-				S-
Pts (or pti)						S+				S+
Pw	NS			S+	NS					
Pn	NS	NS		S+	NS		S+	S+		
Pr				NS	NS	NS			NS	
Pc			NS							
Pra					S+	NS				S-
Prm (or prd)					NS	NS				S-
Pim (or pimadj or pid)	NS	NS	S+	S+	NS	NS	NS	S-	NS	NS
Pb	NS	NS	NS	NS	NS	NS	S+	NS	NS	NS
Pmp (or pdp)	S+			NS	S-	NS	S-	NS	NS	NS
Pmi (or pmae or pdi)	S+	NS	S+	NS	NS	S-	S-	NS	S+	S+
Pmf (or pdf)			NS	NS	NS	NS				NS
Pms	S+								S+	
Pmt						NS				
Pmpl				S+						
Av. L. bouts		NS	NS	NS			NS	S-	NS	
Longest bouts		NS	NS	NS			NS	S-	S+	

The codes are percentages of the codes explained in table 4.3.
In two cases (peadj and pimadj for Mi), the figures included one score that was very atypical. Additional significance tests were carried out on the adjusted (adj) figures excluding these atypical scores.

S+: significant increase
S-: significant decrease
NS: not significant
Blank: not relevant to that child

I will comment and elaborate on various aspects of the results in this table by grouping together: 'engagement' (Pe) and 'amount of playing' (Pm); 'vocalisations' (Pv) and 'words' (Pw); 'negative behaviours' (Pn); 'other behaviours where significant changes occurred for the children' (Pmx, Pi, Pm and Ppc); 'children's behaviours towards parents and therapist' (Pra, Prm, and Pim); and 'parents' behaviours' (Pmp, Pmi, Pmf, Pms, Pmt and Pmpl).

4.4.2.1: Children's levels of engagement and amount of playing

The first line in this table (pe or peadj) shows that four out of the ten children became significantly more engaged as music therapy sessions progressed. The other six children remained stable and none of the ten children became less engaged as sessions evolved. The third line, on the other hand, shows that four of the children's amount of actively playing significantly decreased as music therapy sessions progressed. Only one child's playing significantly increased and one child's longest playing bouts increased. Music therapy therefore enabled four out of the ten children to become significantly more engaged as sessions progressed. As the children became more involved they often actually played less, but perhaps the playing they did do was more communicative.

The following charts (Charts 4.1 to 4.10) show the ten children's levels of engagement (dotted line) and amount of playing (continuous line) across the ten sessions.
The horizontal category axis (triangles and squares) represents the session numbers, and the vertical value axis represents the amount of playing or engaging.

Charts 4.1 to 4.10: Children's levels of engagement (dotted line) and amount of playing (continuous line)

Chart 4.1: W

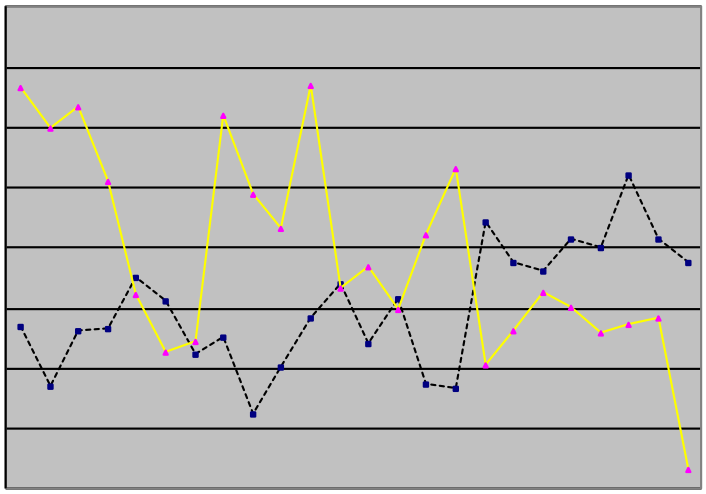


Chart 4.2: J

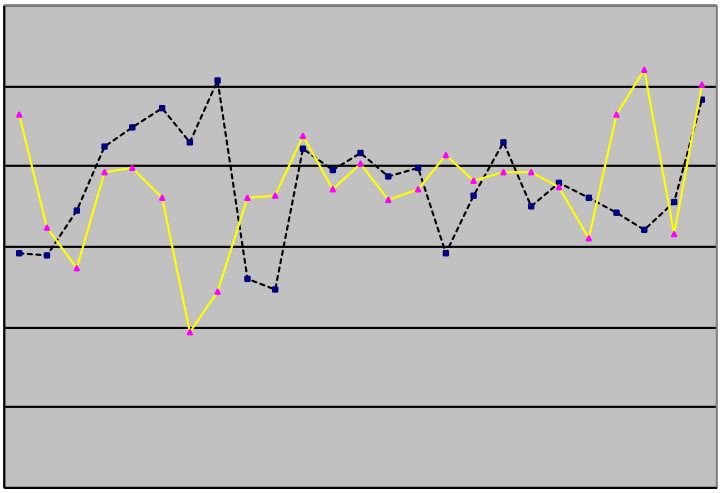


Chart 4.3: Mi

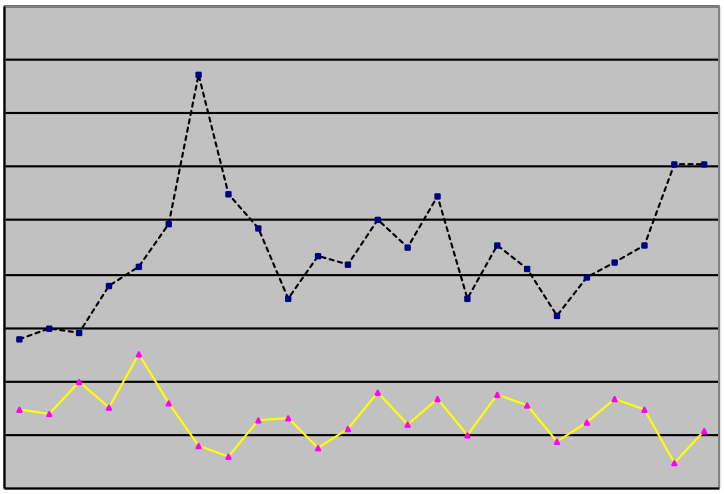
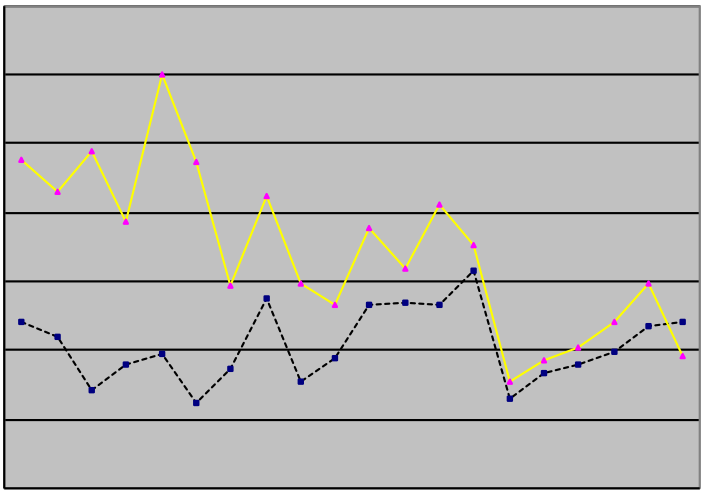


Chart 4.4: 'I'



Horizontal category axis: numbers of sessions
Vertical value axis: amount of playing or engaging.

Charts 4.1 to 4.11: Children's levels of engagement (dotted line) and amount of playing (continuous line)
(continued)

Chart 4.5: Ma

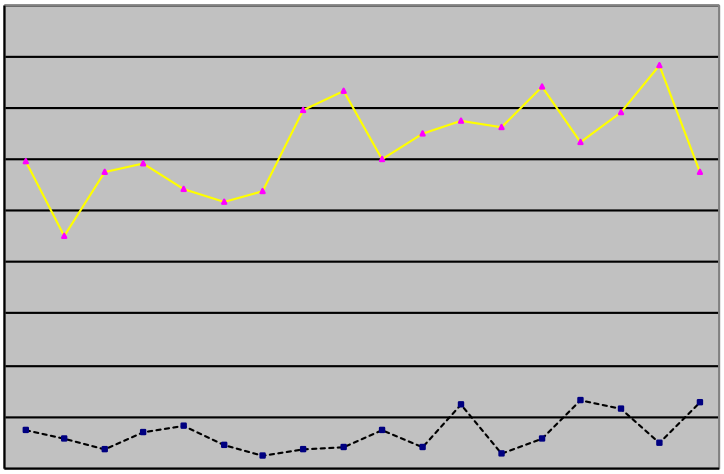
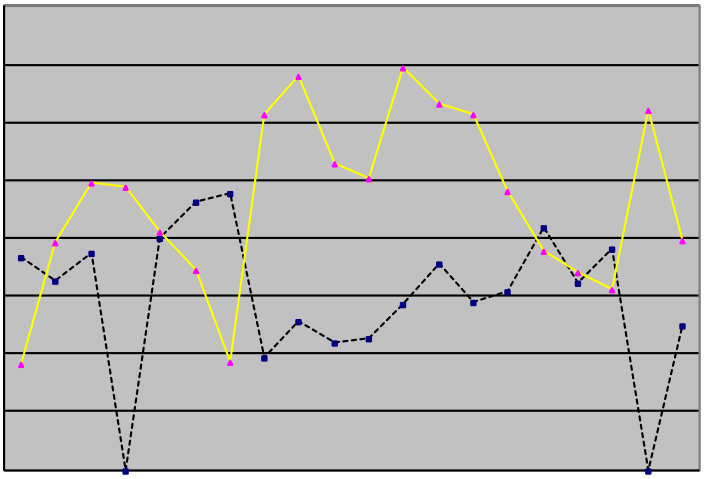


Chart 4.6: E



Note: the scales on the axis of E's chart are different to those on the other children's charts.

Chart 4.7: R

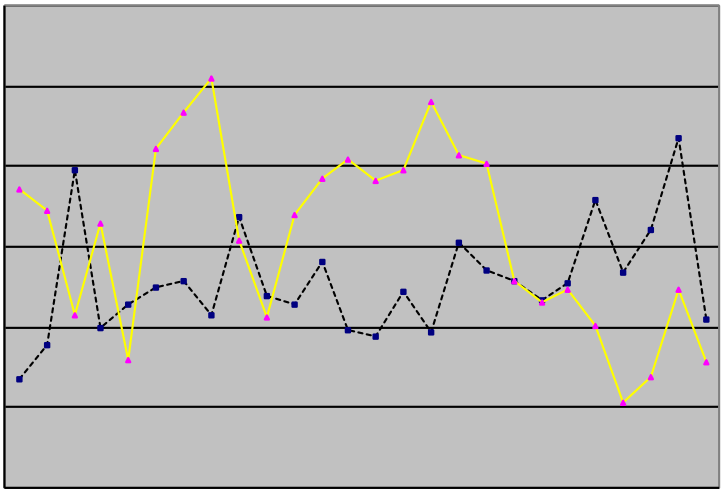
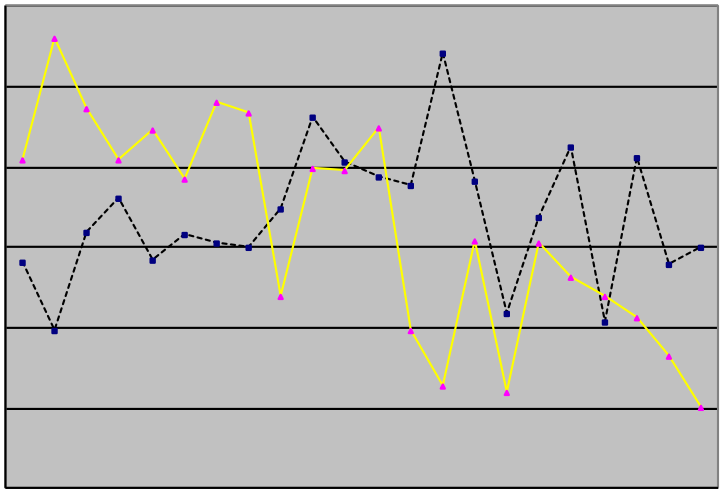


Chart 4.8: M



Horizontal category axis: numbers of sessions
Vertical value axis: amount of playing or engaging.

Charts 4.1 to 4.10: Children's levels of engagement (doted line)

and amount of playing (continuous line)
(continued)

Chart 4.9: H

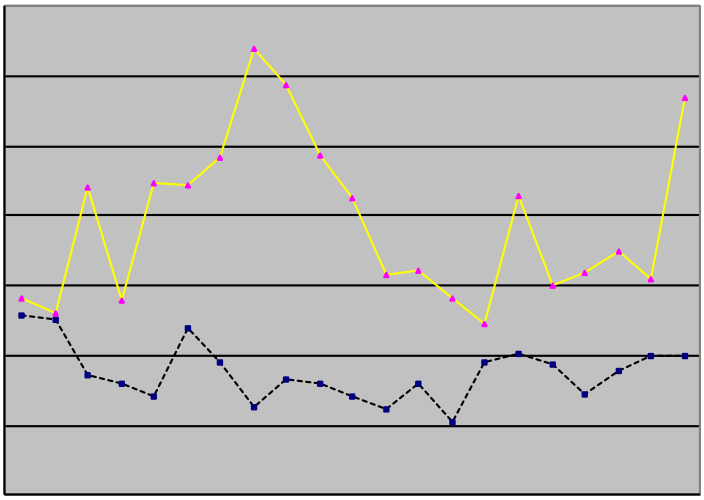
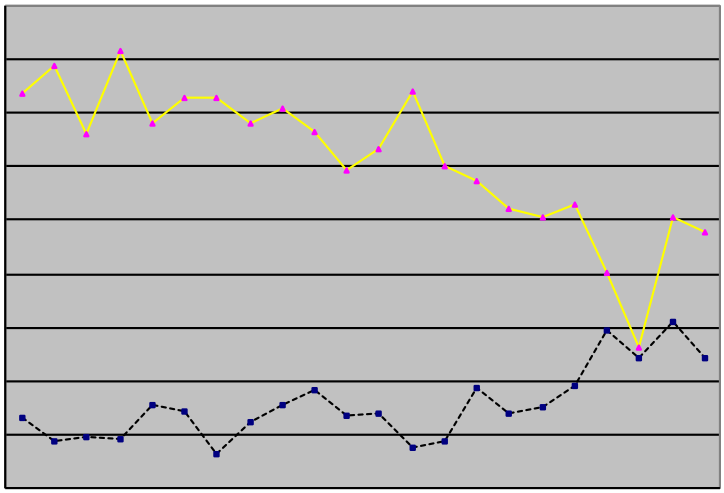


Chart 4.10: B



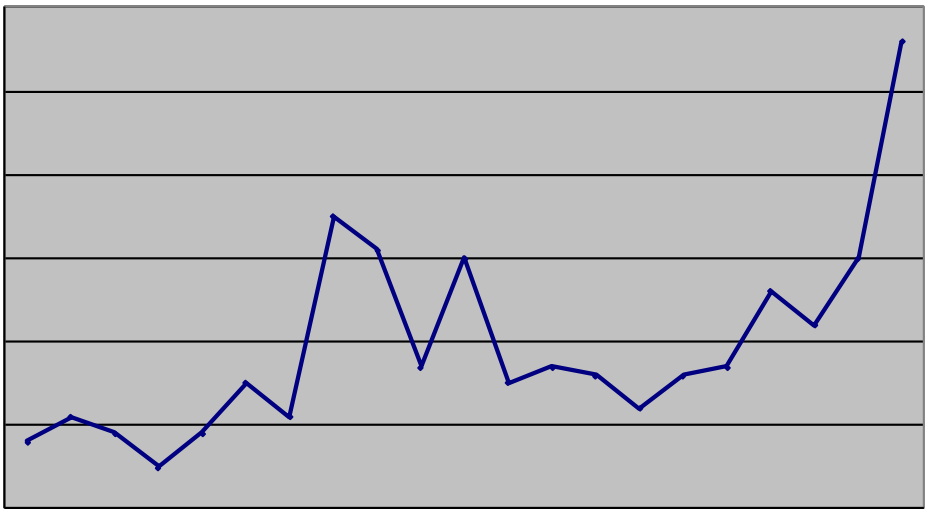
Horizontal category axis: number of sessions
Vertical value axis: amount of playing or engaging.

It is interesting to look at 'levels of engagement' compared to 'amount of playing' for all ten children because these charts show not only that the children's levels of engagement and amounts of playing were independent of each other, but also that the relationship between the two observed behaviours was not the same for all the children. Some children's levels of engagement were consistently lower than their levels of playing ('I', Ma, H and B) However, for one child (Mi), it was the other way around: his levels of engagement were consistently higher than the amount he played. For five of the children (W, 'I', R, M and B), the pattern of 'engagement' going up or remaining stable while the 'playing diminishes' was clear to see in these charts.

Table 4.4 also shows that only two of the children's playing bouts changed significantly. M's average length of bouts and longest bouts significantly decreased, which is not surprising as his overall levels of playing also decreased significantly. However, it was interesting to find that H's highest levels of bouts significantly increased as his overall

levels of playing did not significantly change. The gradual increase in the length of H's longest playing bouts is illustrated in the following chart 4.11.

Chart 4.11: H's longest bouts of playing



Horizontal category axis: number of sessions
Vertical value axis: length of playing bouts

4.4.2.2: Changes in vocalisations or words

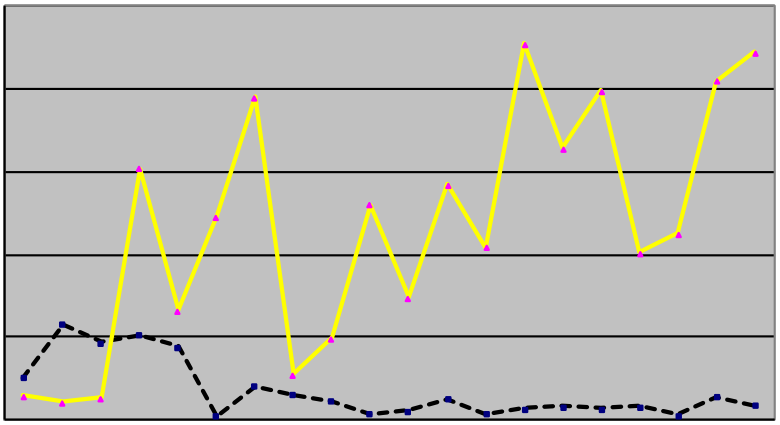
Line 10 (Pv) in table 4.4 indicates that apart from 'B' music therapy was not very successful at increasing the children's amount of playful movement or their vocalisations. Perhaps this was because the music therapist used the children's vocalisations as a way to engage the children rather than actively encouraging them to vocalise more. It could also be argued that the child doesn't vocalise so much during sessions because so many other things are happening and because I am very active myself. However, I do not feel that the child would remain so engaged if the sessions included long periods of inactivity on my part. In addition, parents often report that the children seem to vocalise more outside music therapy sessions as a result of the work, even if they do not vocalise so much

during the sessions themselves. This was the case for W, J and H and also for John in the case study by Jones and Oldfield (1999).

The two children (E and B) where an effort was being made to reduce echolalic speech and increase spontaneous speech both significantly decreased their echolalic speech and increased their spontaneous speech. In addition, B's echolalic vocalisations decreased significantly and his spontaneous vocalisations increased significantly. These results are illustrated in the following charts 4.12 to 4.14.

Chart 4.12: E's echolalic and spontaneous speech

E's echolalic speech: dotted line
E's spontaneous speech: continuous line

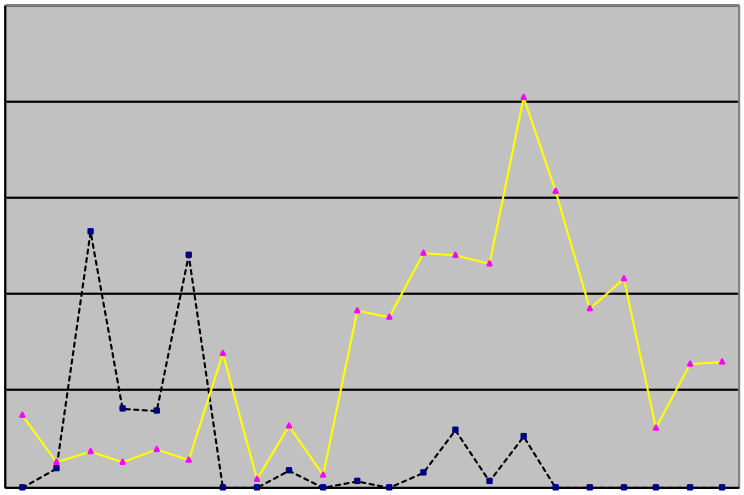


Horizontal category axis: number of sessions
Vertical value axis: amount of words

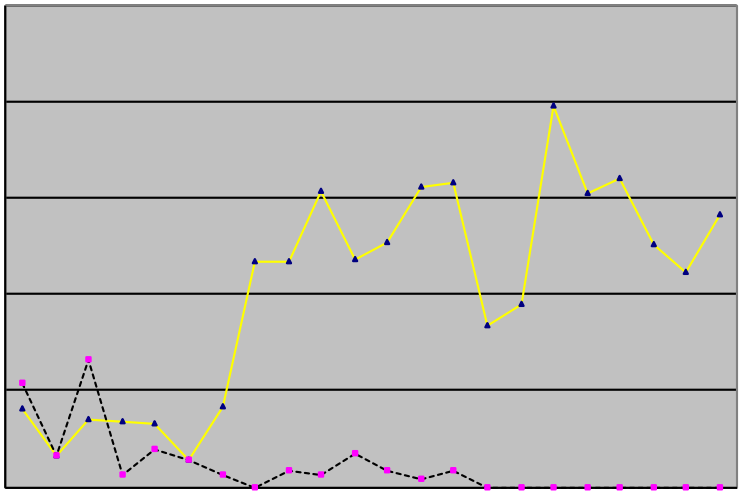
Chart 4.13 & 4.14

B's echolalic and spontaneous vocalisations
B's echolalic and spontaneous speech

B's echolalic vocalisations: doted line
B's spontaneous vocalisations: continuous line



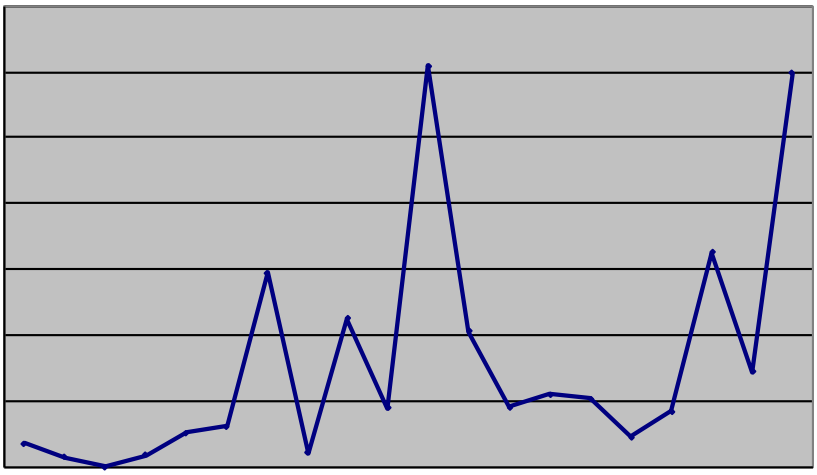
B's echolalic speech: doted line
B's spontaneous speech: continuous line



For both these charts: Horizontal category axis: number of sessions
Vertical value axis: amount of vocalising or words

Line 13 (Pw) in table 4.4 shows that W, J and Ma's use of words did not change during music therapy treatment. However, 'I's use of words significantly increased as is shown in the next chart 4.15.

Chart 4.15: 'I' s use of words



Horizontal category axis: number of sessions
Vertical value axis: amount of words

Charts 4.12, 4.13 and 4.14 show that music therapy seems to have been effective at decreasing echolalic vocalisations and speech and the three charts plus chart 4.15 show that music therapy was effective at encouraging spontaneous speech.

4.4.2.3: Changes in negative behaviours

Table 4.4 shows that for the three behaviours where a decrease might have seemed a positive outcome (Pn, Pr and Pc), none of the children showed any decreases in these areas and for three children the negative behaviours significantly increased. Music therapy is often non-directive and as the children become at ease in the sessions it is important that they feel free to express feelings of anger and frustration. The following three charts 4.16, 4.17 and 4.18 illustrate the negative behaviours that significantly increased.

Chart 4.16: 'I's negative behaviours

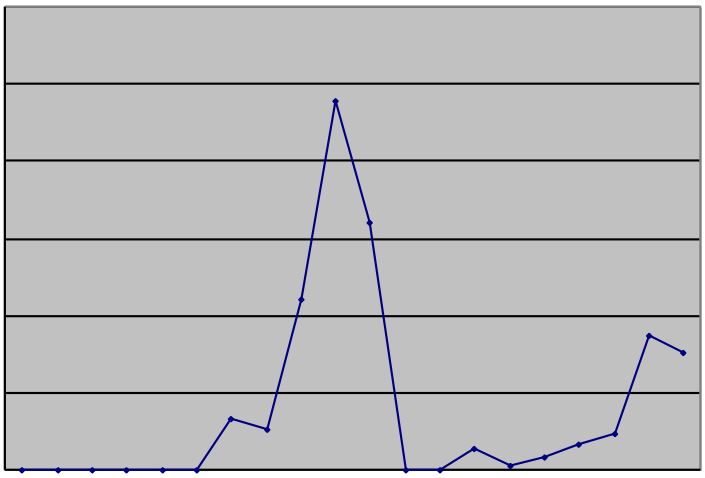


Chart 4.17: R's negative behaviours

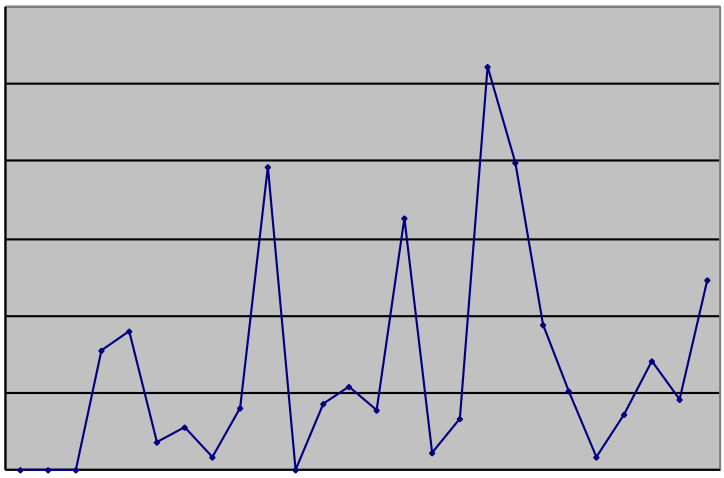
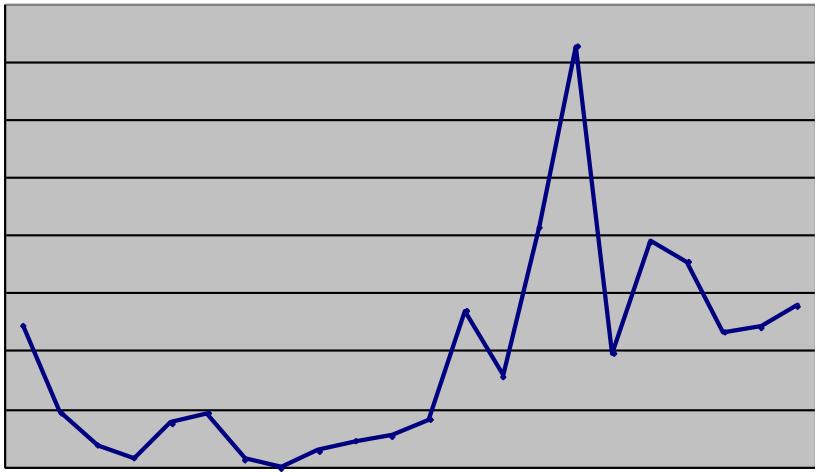


Chart 4.18: M's negative behaviours



For all these charts: Horizontal category axis: number of sessions
Vertical value axis: amount of negative behaviours

Note: Because these three children showed very different amounts of negative behaviour, the scales on the axes are very different for each chart.

These charts show that the three children whose negative behaviours significantly increased ('I', R and M) all had initial 'honeymoon' periods where they showed little or no negative behaviours. The child needs time to adapt to a very new situation and to become familiar with both the musical instruments and to the fact that music is being

used as a means of interacting. Time is also needed for a trusting relationship to be established between the child and the therapist. Only after the child feels at ease will he or she feel 'safe' to display challenging behaviour. Nordoff and Robbins (1977) were aware of the positive aspects of some children's resistance in their rating scales, noting that levels of resistance were found to increase as participation also increased.

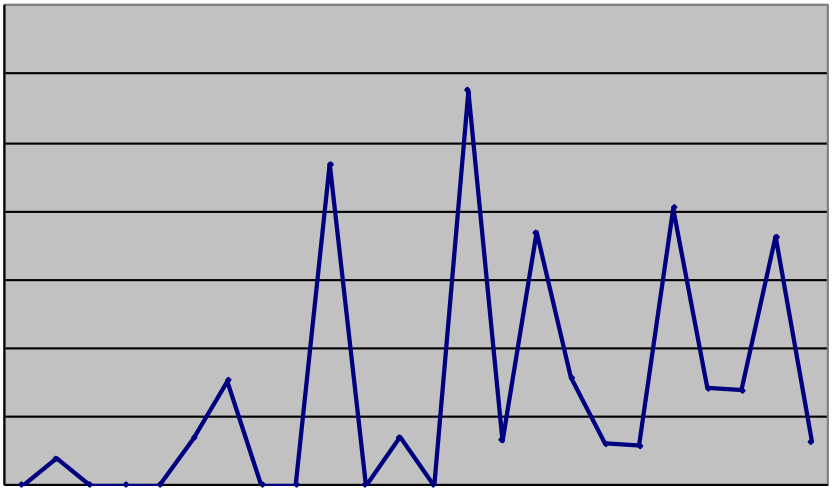
In addition, it is important that in spite of an escalation of difficult behaviour none of the children's levels of engagement decreased significantly. For some children it is important to know that they can express rebellious feelings that can be heard and understood. The act of expressing strong emotions can relieve tension and could in some cases cut down on negative behaviours outside the music therapy sessions. Thus, in some situations the fact that a child's negative behaviours increase in music therapy sessions could be an indication that the child is in a constructive therapeutic process. For some parents (this is shown later in this chapter for M's mother) the fact that the child can openly express negative feelings outside the home which are contained within a therapeutic situation can be a great relief and diminish their own levels of stress.

It is also important to note that it can be useful for parents if children show some of their difficult behaviours in music therapy sessions, as they might then be able to get new ideas from me about how to deal with or think about these behaviours. Parents can also gain from 'sharing' their child's difficult behaviours and by the recognition that looking after their child is often hard work. Perhaps it is not a coincidence that the two mothers whose PSI stress levels reduced the most during pre and post treatment were R and M's mothers (See section 4.4.4). Both R's and M's negative behaviours increased significantly during the music therapy sessions.

4.4.2.4: Other significant changes in the children's behaviours

Line 4 in table 4.4 shows that for those three children where we felt it would be useful to look at how their 'playing with parent's help' changed during music therapy sessions only one child's behaviour (Mi) changed significantly.

Chart 4.19: Mi's 'playing with parent's help'



Horizontal category axis: number of sessions
Vertical value axis: amount of 'playing with parent's help'

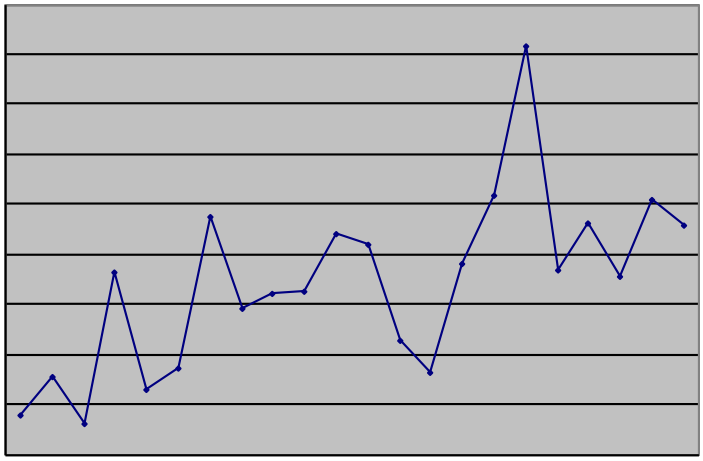
Chart 4.19 gives the impression that Mi's 'playing with help' varied greatly form week to week. However, the scale on the axes is very small and the total amount of time Mi 'played with help' was only very small.

As a music therapist I would usually encourage children to play independently rather than rely on 'playing with help'. However, in some cases, when children are very isolated, a child will respond well to being guided or actively encouraged. The earlier chart 4.3 shows that Mi played very little. Perhaps he needed the increased amount of 'playing with help' to allow him to increase his levels of engagement. Chart 4.19 shows that his 'playing with Mum's help' varies from week to week. It is interesting to note that in the first half of the treatment there were a number of sessions (sessions 1,3,4,5,8,9,11 and 13) where he did not play with help at all. This change may also have been due to the fact

that Mi's mother progressively became more engaged with him. (see line 22, Pmi, in table 4.4).

Line five in table 4.4 shows that B's amount of 'initiating' significantly increased. This is illustrated on the following chart 4.20.

Chart 4.20: B's initiating



Horizontal category axis: number of sessions
Vertical value axis: amount of 'initiating'

This chart shows a very clear increase in B's initiating. B made progress in many areas during music therapy sessions but it was particularly exciting to see that he became more forthcoming and self-assured as he started off sessions in quite a 'meek' and shy way.

Line six in table 4.4 shows that three of the children's amounts of 'playful movement' changed significantly during treatment. B's playful movements increased whereas J and M's playful movements decreased. These changes are illustrated in the following charts 4.21 to 4.23.

Chart 4.21: J's playful movements

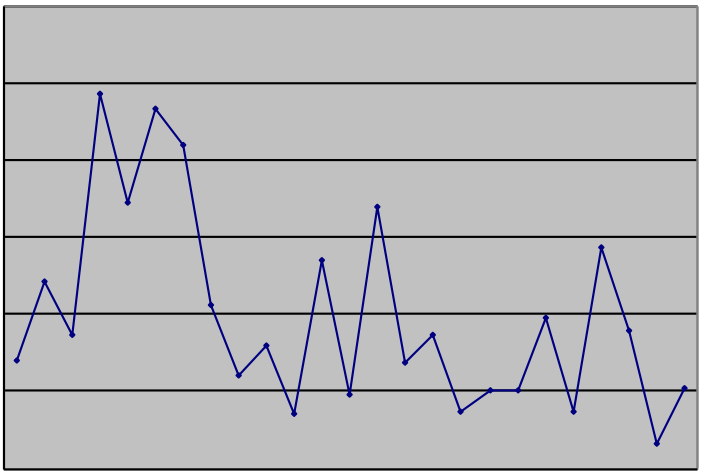
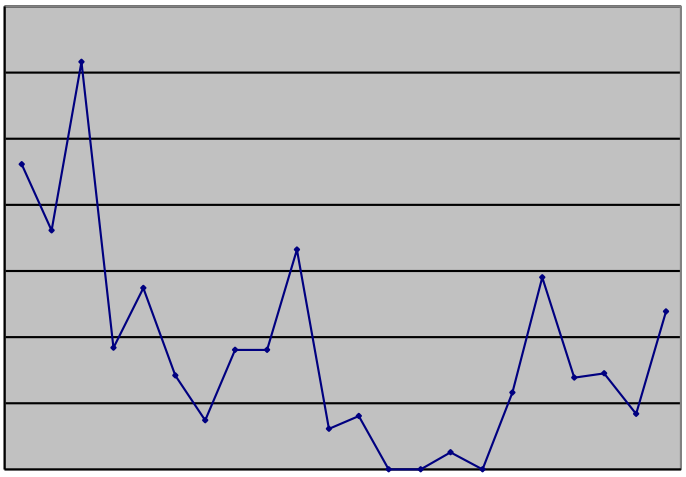
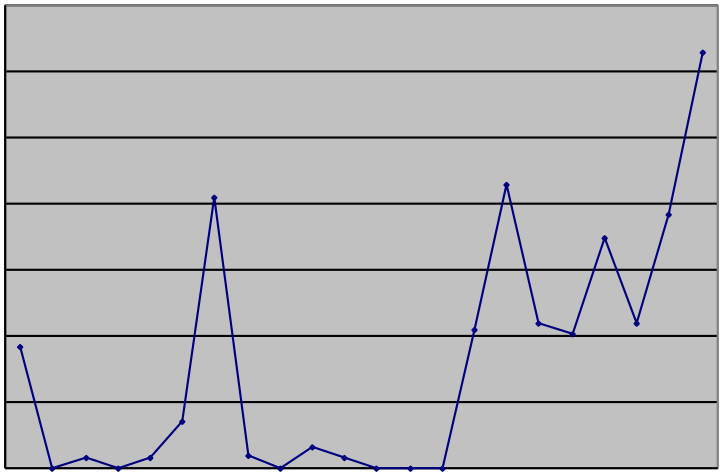


Chart 4.22: M's playful movements



Note: The axes on J's chart represent larger numbers because he used a lot more playful movements in the sessions than the other two children.

Chart 4.23: B's playful movements



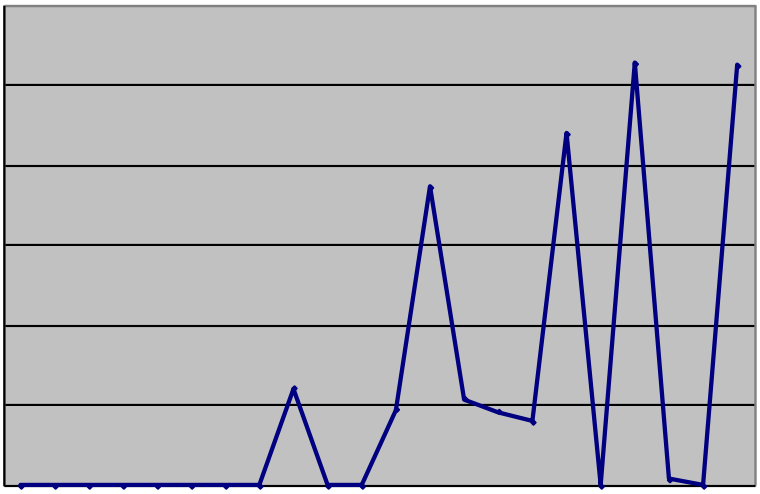
For these three charts: Horizontal category axis: number of sessions
Vertical value axis: amount of playful movement

All three of these charts show that the children's 'playful movement' varied considerably from session to session. To a large extent the children's playful movements were dependant on whether or not I chose to respond and elaborate on the child's movements in any given session. M's and B's results fit in with the general pattern of their progress

as many of M's behaviours decreased and most of B's behaviours increased. For J, however, this is the only significant change during treatment. As J was a very active little boy who struggled to remain in one place for very long I feel it was a sign of improvement that his level of engagement and playing remained constant (see chart 4.2) without me having to resort to so much playful movement.

M was the only child for whom we measured 'physical contact with Mum'. As M rebelled more and was more easily cross or upset as sessions progressed his mother tried to comfort him by taking M on her lap and giving him cuddles. I tried to support her efforts to reassure him by playing 'rocking' music on the piano and singing about how M was being hugged by his mother. It was therefore not surprising to see that 'physical contact with Mum' significantly increased for M, (See line 8 in table 4.4). The following chart illustrates this change.

Chart 4.24: M's physical contact with Mum



Horizontal category axis: number of sessions
Vertical value axis: amount of 'physical contact with Mum'

This chart shows very clearly that 'physical contact with Mum only started in session 8, and then continued to be sporadic, but gradually increased.

4.4.2.5: Changes in the children's behaviours towards parents or therapist (other than engaged)

Line 17 in table 4.4 shows that, for two out of the three children (Ma, E and B) for whom I made a distinction between 'engaged' and 'responding to Amelia', significant changes occurred in the way they responded to me during music therapy sessions.
These changes are illustrated in the following two charts:

Chart 4.25: Ma's responses to Amelia

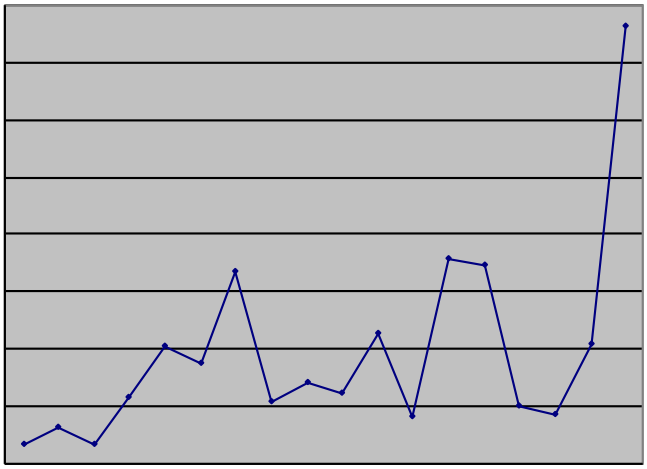
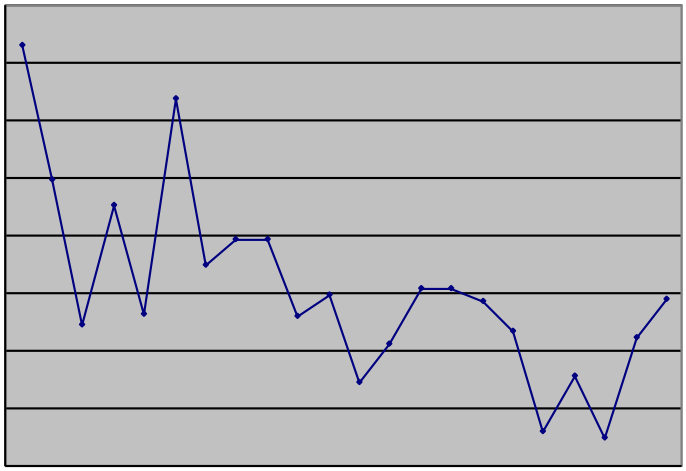


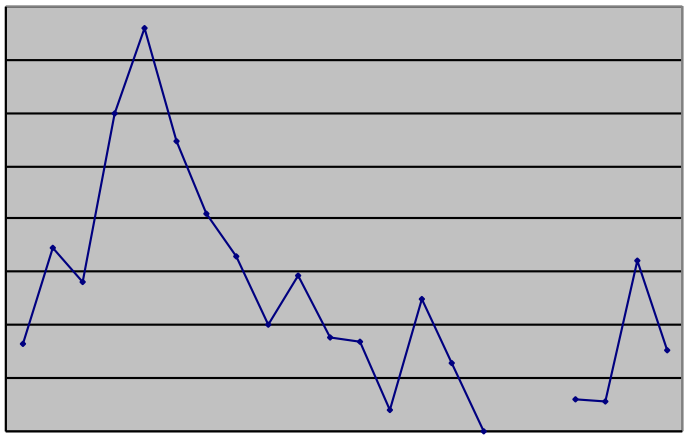
Chart 4.26: B's responses to Amelia



For both these charts: Horizontal category axis: number of sessions
Vertical value axis: amount of responses to Amelia

For both these children I felt these results were positive. Ma, was the only child whose playing significantly increased (see chart 4.5). As his playing increased, his responses towards me also increased. For B, whose engagement (chart 4.10) and initiating (4.20) significantly increased, the fact that his 'responding to me' decreased was a sign that he was more independent and initiated more of his own accord. For the same reasons I felt it was a sign of progress for B that his 'responses to Mum' significantly decreased as illustrated in the following chart.

Chart 4.27: B's responses to Mum



Horizontal category axis: number of sessions
Vertical value axis: amount of responses to Mum

B's responses to Mum varied from week to week but gradually decreased as he began to be more decisive and make choices himself. However, it should be noted that the variations between his responses to his mother were not very big as the highest figure on the chart is under 8%. On session 17, his father brought him to the session so this figure is not included here, as it couldn't be compared to his responses to his mother. This chart and chart 4.26 are both examples where results may appear to show a deterioration in the child's behaviour, but when analysed in the light of the individual child's needs, actually turn out to be a sign of progress. Thus B's decrease in responses to myself and his mother were a sign of growing independence and confidence rather than an indication that he was becoming less responsive.

Line 19 in table 4.4 (Pim) shows that two of the children's (Mi and I) 'initiating towards Mum' significantly increased. These changes are illustrated in charts 4.28 and 4.29

Chart 4.28:
Mi's initiating towards Mum

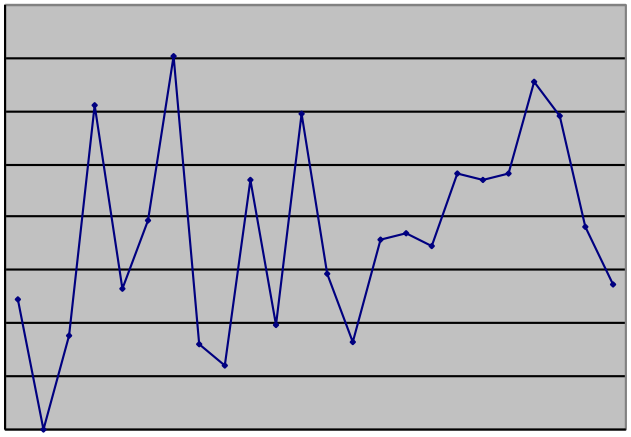
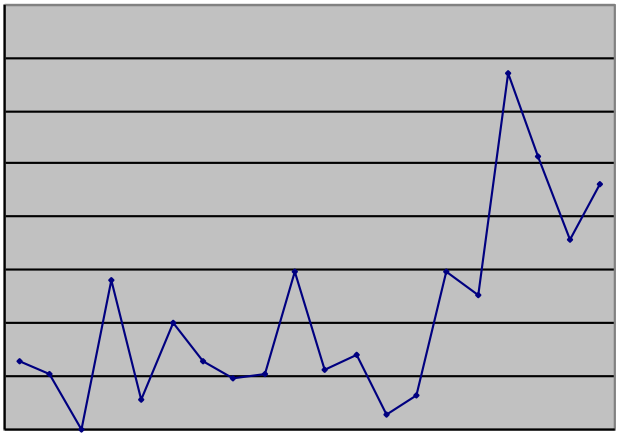


Chart 4.29
'I's initiating towards Mum



For these two charts: Horizontal category axis: number of sessions
Vertical value axis: amount of initiating towards Mum

Although these behaviours varied from week to week, particularly for Mi, the steady increase is apparent from these charts for both the children.

Line 22 in table 4.4 (Pim) also shows that M's 'initiating towards Mum' significantly decreased. This was not altogether surprising as his negative behaviour increased (chart 4.18), he generally became more rebellious and needed physical comforting (chart 4.24). Nevertheless, in spite all these changes and difficulties, M's levels of engagement with me remained stable (chart 4.8).

4.4.2.6: Changes in the parents' behaviours

The parents' significant behaviour changes are shown in lines 21 (Pmp), 22 (Pmi), 23 (Pmf), 24 (Pms), 25 (Pmt) and 26 (Pmpl) in table 4.4. Eight out of the ten parents showed some significant changes in their behaviours in music therapy sessions. There were a total of twelve significant changes. Eight of these changes were increases and four were decreases. Four out of the ten children's parents' levels of engagement (Pmi) with their children significantly increased during music therapy treatment. It was

interesting to see that the two parents who seemed to want to sing with their children were able to do so significantly more as the music therapy sessions progressed. These findings suggest that music therapy seems to have been successful in involving parents in the work and helping them to enjoy engaging with their children. It must also be added that for Ma and E the fact that the parents played less and attempted to engage less was actually a positive change as they both gained from taking more time to sit back and listen to their child. Ma's father in particular identified this as one of the important things he had learnt from music therapy sessions (see section 4.4.3). R's mother whose 'playing' and 'attempting to engage' also significantly reduced, explained to us that she had made a choice to intervene less as she felt this allowed R to be more easily involved with me and she wanted to enjoy observing him interacting with me (see section 4.4.3). Section 4.4.4 shows that her stress levels were reduced pre and post treatment, so she also gained from music therapy treatment even though her active participation did not increase.

4.4.2.7: Different ways in which I distributed my time during the sessions

The following table shows how I (A) distributed my time across the ten dyads.

Table 4.5: A's time distribution in sessions for the ten children

(expressed as percentages)

	Mean percentages of A's activities in music therapy sessions					
Children	MPAV	MPAO	MPAP	MPAC	MPAM	MPAB
W	70.0	19.0	26.3	6.0	11.4	10.9
J	66.7	32.1	17.8	6.9	13.6	10.6
Mi	66.2	20.0	18.8	8.8	4.2	10.1
I	55.8	17.4	31.5	7.3	7.9	10.9
Ma	48.0	10.8	21.9	9.8	3.1	21.3
E	43.6	22.5	25.0	8.1	4.0	17.8
R	74.6	26.5	21.7	7.1	14.2	7.7
M	50.7	26.3	24.5	4.4	9.8	9.4
H	54.5	25.7	28.3	8.7	2.1	7.6
B	42.7	24.5	25.1	10.1	2.1	14.5
Average across ten children	57.2	22.4	24	7.7	7.2	12

MPAV: Mean percentage A vocalises
MPAO: Mean percentage A plays 'other' instruments
MPAP: Mean percentage A plays piano
MPAC: Mean percentage A plays clarinet
MPAM: Mean percentage A moves playfully
MPAB: Mean percentage A was not playing or engaging

I have illustrated the last line of this table in pie charts. The total of these figures adds up to more than 100 % because a lot of the time I was playing, singing and moving simultaneously.

Mean percentage of A's activities in music therapy sessions across the ten children: Charts 4.30 to 4.35

Chart 4.30:
A's vocalisations (57.2 %)

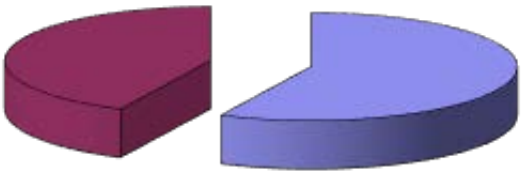


Chart 4.31:
A's playing of 'other' instruments (22.4 %)

Chart 4.32:
A's piano playing (24 %)

Chart 4.33:
A's clarinet playing (7.7 %)

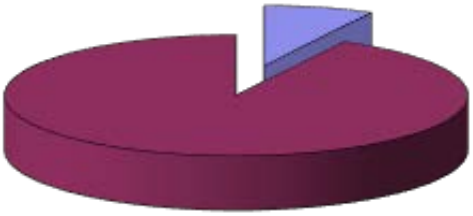
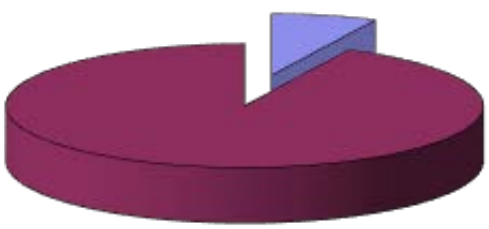
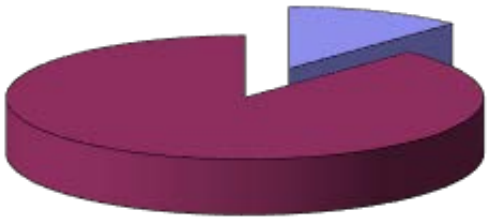


Chart 4.34:
A's playful movement (7.2 %)

Chart 4.35:
A not playing or engaging (12 %)





These pie charts show that I spent more time than anything else vocalising with the children. The figures in table 4.4 show that this was the case for all the children even though the percentage varied from 42.7 % to 74.6 %. Although I was aware that I spent a lot of time vocalising with the children I had no idea how high this percentage was. It would appear that the figure is higher for children like W and R who needed encouragement to be actively involved and lower for children like Ma, E and B who played a lot themselves and had clear ideas about what they wanted to do in sessions.

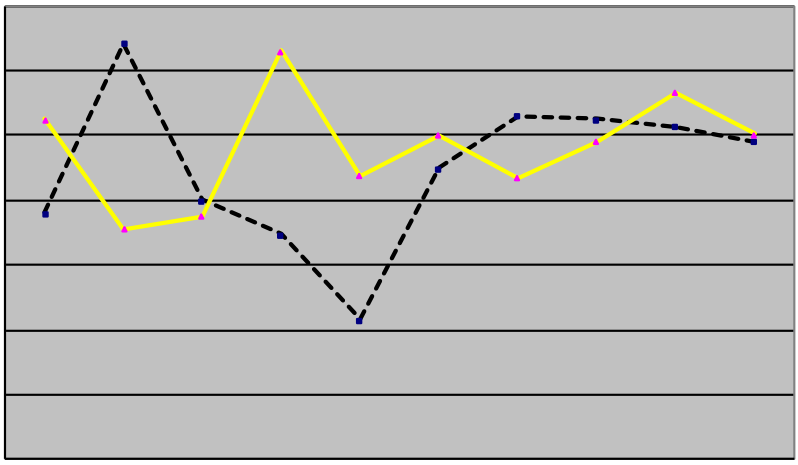
The proportion of piano playing (24 %) and the playing of 'other' instruments (22.4 %) is similar and varies quite a bit from child to child.

The following chart 4.36 shows how, with quite a number of the children, when the piano playing was high, the 'other' instrument playing was low and vice a versa. This could be explained by the fact that when children were not particularly drawn to the piano or I wasn't able to capture their attention from the piano I then played more of the 'other' instruments myself.

Chart 4.36: A's percentages of 'other instrument' playing and piano-playing across the ten children

Continuous line: A's piano-playing

Dotted line: A's 'other instrument' playing

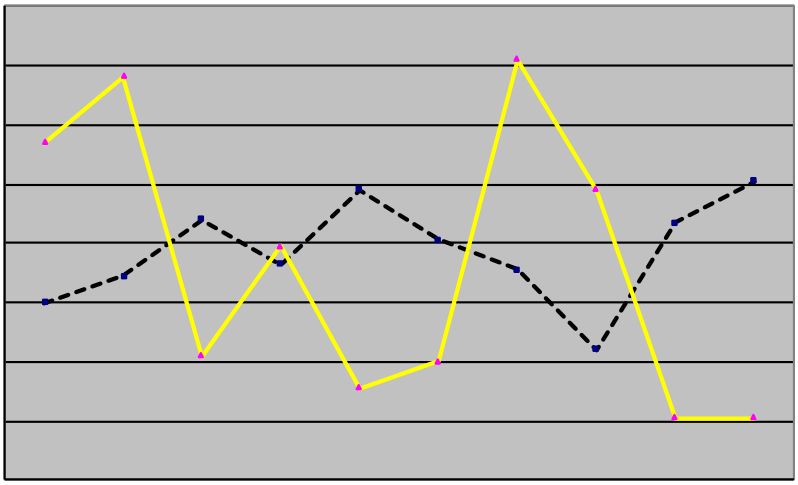


Horizontal category axis: number of children
Vertical value axis: amount of playing

My overall percentages of clarinet playing (7.7 %) and 'playful movement' (7.2%) were very similar. However, chart 4.37 shows that the two activities don't seem to correlate in any way. This was quite surprising as I often move around the room while playing the clarinet. Clearly I also move playfully in the sessions without my clarinet, and sometimes play the clarinet without moving playfully at the same time.

Chart 4.37: A's percentages of clarinet playing and playful movement across the ten children

Continuous line: A's 'playful movement'
Dotted line: A's clarinet-playing.

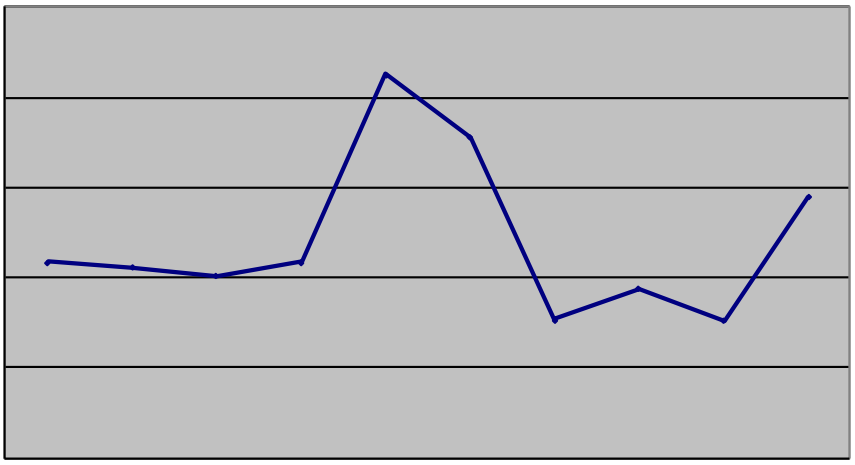


. Horizontal category axis: number of children
Vertical value axis: amount of playing

This chart also shows that the amount of my clarinet playing was quite similar across the ten children whereas the 'playful movement' varied much more from child to child.

This last chart 4.38 shows the percentage of my time 'not playing or engaging' across the ten children. Interestingly, this figure is quite similar across the children apart from Ma (21 %) and E (17.8 %). This is understandable as Ma played all the time and I had to leave him a lot more 'space' than the other children, and E liked to be in control and would often ask me not to play.

Chart 4.38: A's percentage of time 'not playing or engaging'



Horizontal category axis: number of children
Vertical value axis: amount of time 'not playing or engaging'

4.4.3: The semi-structured interviews

The following information is taken from the semi-structured interviews carried out by the research assistant with each of the parents before and after treatment. For the pre-treatment interview I consulted her written notes on the forms used to guide the interview (see Appendix 4.7). For the post treatment interview I listened to the audio tape of the interview and made notes as I listened.

4.4.3.1: W's mother

W's mother's pre-treatment semi-structured interview indicated that she had a positive view of W, accepted his difficulties and was concerned, but not anxious about him. She was happy about the way she related to W.

She had a realistic view of his strengths and difficulties and hoped that music therapy would offer W a way of communicating that he would understand. She wanted W to be able to enjoy music making *with* other people and to see his listening, imitation and turn-taking skills improving.

In the post-treatment interview, W's mother was clearly very pleased with his progress in music therapy sessions. She felt that:

- he would now let her sing to him and interact through singing exchanges;
- he was more relaxed and affectionate;
- he would now let her read with him;
- he was affectionate, giving her lovely kisses and asking for hugs.

She also felt that she was more optimistic about W now because she was getting more feedback from him and because she had seen him doing so much in music therapy sessions.

4.4:3 2: J's mother

In the pre-treatment interview, J's mother had a positive view of her son, accepted his difficulties and was realistic about his strengths and difficulties. She was concerned but not anxious about J and seemed quite happy about the way she related to him.

She felt that his strengths lay in his physical abilities to run and jump, and the fact that he was 'easy going' and didn't have any behavioural problems. His main weakness was that he didn't seem to want to communicate.

She didn't have very high expectations, but she felt that in music therapy sessions he would want to interact with me and his communication skills might improve. She also felt he was musical and hoped he would enjoy the sessions.

In the post-treatment interview, J's mother was very positive, saying that he had thoroughly enjoyed the sessions and that he had improved a lot. She felt that J was 'completely with music therapist' in the sessions and that she had never seen J relate so intensely to anyone apart from herself. She said that he was now generally enjoying communicating more and it was easier to get his attention. She also felt that he was now making more vocal noises. He still had difficulties concentrating. She had been able to use some ideas from music therapy sessions at home.

4.4.3.3: Mi's mother

Mi's mother's pre-treatment interview indicated that she had a mixed view of Mi and partially accepted his difficulties. She had a realistic view of his strengths and weaknesses. She was very anxious about Mi and felt she could only sometimes communicate with him.

She felt that music was one of the few things that interested Mi and hoped that music therapy sessions would help him to interact, and capture and sustain his interest in something. She found it quite difficult to talk about what she herself might get out of the sessions.

In the post-treatment interview Mi's mother was openly angry that Mi's sessions had stopped. She felt that Mi was just starting to show signs of progress in the last few sessions and that the one thing he was responding to, was now being taken away from him. She said several times that she felt music therapy worked but that it had taken Mi a long time to respond. She commented that Mi had learnt the structure of the sessions and that she was amazed that he was able to follow instructions and had learnt to point in

music therapy sessions. She was able to acknowledge that he had achieved the aims originally set out for him and that the sessions had given her insight into the fact that he could do more than she thought. Nevertheless, the interview was overshadowed by her negative feelings about the work coming to an end. She said that because he couldn't generalise any of the progress he had made in music therapy sessions, he would now have to go back to square one.

4.4.3.4: I's mother

In I's mothers pre-treatment semi-structured interview, I's mother showed that she had a mixed view of her daughter. She accepted her difficulties and had a realistic view of her daughter's strengths and weaknesses. She was anxious about I and felt that she could only sometimes communicate with her.

She hoped that 'I' would enjoy the music therapy sessions and that they would help her to concentrate more and accept adult direction. She also wanted I to use more words. She mentioned that if 'I' was doing something constructive she would feel less guilty about not always doing constructive things with her at home.

In the post-treatment interview, I's mother said that 'I' had obviously enjoyed the sessions and that the structure of the sessions helped her to conform to adult requests. She thought that I was now using more words both in the music therapy sessions and outside. She said that what she wanted to happen *had* happened.

She mentioned that at first she (herself) had not felt she wanted to take part as she didn't want to interfere with I's relationship with me. However, as sessions progressed it became clear that 'I' really wanted her to take part and this pleased her. Towards the end of the work she (the mother) felt she was getting something out of the sessions for

herself. She was also able to take ideas from the sessions home, which she had already used with I and was hoping to experiment with both I, and her older sister, in the summer.

4.4.3.5: Ma's father's semi-structured interviews

In the pre-treatment semi-structured interview I arranged for a translator to be present as neither of Ma's parents spoke very much English. Apart from the interview itself, I wanted to be quite sure that Ma's parents were happy about being part of this research project.

Although both Ma's parents both seemed to be happy to be taking part in the research, the research assistant who conducted the interview noted that many questions were difficult to answer, as both parents seemed to find it difficult expressing themselves or giving opinions, even with the help of the translator.

What seemed to come out of the interview was that the parents had a mixed view of Ma and partially accepted his difficulties. They were anxious about Ma, but happy about the way they related to him. It was difficult to ascertain whether or not they had a realistic view of his strengths and difficulties.

They both felt that Ma very much liked music and hoped that music therapy would help him to develop communication and language.

In the post treatment post treatment interview Ma's father was insistent that he didn't need a translator. However, in the interview, it wasn't always clear whether he completely understood the questions he was asked, and it was often quite difficult to follow his answers.

Nevertheless, Ma's father was definitely positive about music therapy and felt it had been helpful. He said that Ma's turn-taking skills and language had improved, although he sometimes repeated word in an echolalic way. He said that by watching me interact with

Ma in music therapy sessions he had learnt to follow his son rather than demand things of him all the time.

4.4.3.6: E's mother's semi-structured interviews

In E's mother's pre-treatment semi-structured interview, it was clear that she had a positive view of E, accepted his difficulties and had a realistic view of his strengths and weaknesses. She was concerned about him but not anxious. Her main hope for E in music therapy sessions was that he should enjoy the sessions. She felt it would be 'nice' if his concentration improved, he became more accepting of adult direction and he used more words, but she didn't have high expectations.

From her point of view she was pleased to have an opportunity to be with him in music therapy sessions without his siblings, and to enjoy seeing him having fun.

In the post-treatment semi-structured interview E's mother said that E had definitely really enjoyed the sessions. His language and eye contact had improved a lot, although it was difficult to know how much of this improvement was due to music therapy and how much was due to nursery.

She felt he still struggled to comply with adult requests, but had become more willing to listen and negotiate. She had recently tried to take him back to the music groups he had previously failed at and was very pleased because he was now thoroughly enjoying the group sessions. She commented that she had previously been embarrassed by his difficult behaviours but had now developed a 'thicker' skin.

She said that she had enjoyed having fun with him in music therapy sessions.

4.4.3.7: R's mother

In R's mother's pre-treatment semi-structured interview it was clear that she had a positive view of R, accepted his difficulties and had a realistic view of his strengths and weaknesses. She was concerned but not anxious about R and was happy about the way she related to R.

She hoped that R would enjoy his music therapy sessions and that his vocalisations might increase. She said that if he said one word it would be fantastic. She looked forward to enjoying watching R having fun.

In the post-treatment semi-structured interview R's mother was very positive about the music therapy treatment. She felt that all the objectives had been achieved. She was impressed with how much R had benefited from the predictable structure of the session, and felt that I had been able to bring out the best in R.

She said that she had particularly enjoyed watching R build up a relationship with me and that she had chosen to be more of an observer than a participant because she felt this would make our interactions easier. She felt great pride in R's achievements and found that her expectations of what R was capable of had been raised by watching him in music therapy sessions.

4.4.3.8: M's mother

In M's mothers pre-treatment semi-structured interview she indicated that she had a positive view of M, accepted his difficulties and had a realistic view of his strengths and weaknesses. She was concerned but not anxious about him and felt happy about the way she related to him.

She hoped that he would enjoy the music therapy sessions and that he might become more accepting of adult direction. For herself, she hoped to enjoy watching him having fun and help him to accept direction. She also thought she might be able to pick up some other ideas of ways to interact with M.

In the post-treatment semi-structured interview M's mother said that she had really enjoyed watching M interacting musically with me in the first few sessions. In some ways it was a little disappointing when he then played less. However, she had been fascinated by my approach, which involved trying to understand M's behaviours rather than attributing his difficulties to 'autism'. She felt that I had helped to make her aware of M's subtle reactions to the music and to accept that M could enjoy listening to music rather than needing to be actively involved.

He was now successfully taking part in a music group, which he had not managed earlier, and she felt this was due to music therapy treatment.

4.4.3.9: H's mother

In H's mother's pre-treatment semi-structured interview, she indicated that she had a mixed, sometimes negative view of H. She partially accepted his difficulties and had a realistic view of his strengths and weaknesses. She was very anxious about H and felt she could sometimes communicate with him.

She hoped that music therapy sessions would give H an opportunity to relate to another adult and improve his communication skills as well as increase his ability to concentrate.

For herself she hoped that she would have a chance to have fun with H as she felt she had few opportunities to do this at present.

In the post-treatment semi-structured interviews, H's mother was very positive, saying that H was always very keen to come to music therapy sessions and that he had become more communicative and responsive generally. She felt his concentration had improved and that the range of things he was willing to try and do had widened. She thought that he had been helped by the clear structure of the sessions and that it was sometimes useful to

structure H's playtimes at home. However, she also said that it was important to have times when they were not trying to achieve anything.

Music therapy had helped her to feel more positive about H. She commented that the music therapy sessions had encouraged her to feel OK about experimenting with vocal sound exchanges with H at home. She said that she had discovered that he enjoyed her singing back the pitches he played on the piano. The music therapy sessions had also helped her to follow H and take his lead rather than imposing something on him.

4.4.3.10: B's mother

In B's mother's pre-treatment semi-structured interview, she indicated that she accepted B's difficulties and had a realistic view of his strengths and weaknesses. She was concerned and anxious about him but happy about the way she related to B.

She hoped that he would enjoy music therapy sessions and that they would widen his sphere of interests. She felt B's confidence needed to improve and felt that we would be able to work on increasing his communication skills, in particular turn-taking and exchanging.

For herself, she hoped to gain insight into his likes and dislikes and get some ideas from music therapy sessions that she could use at home.

In B's mother's post-treatment semi-structured interview she was very positive. She felt his confidence had grown and that he was now able to take the initiative and be 'boss'. She said that B had had 'great fun' and that he had been humorous and playful with me. He had developed a relationship with me that was important to him and that he was able to talk about outside the session.

She had successfully tried out a number of ideas from music therapy sessions at home and now felt more confident about B managing in school.

To summarise:

Nine out of the ten parents were very positive about the music therapy treatment. The only one who wasn't completely positive was Mi's mother. She said that music therapy worked but was very cross with me for stopping the sessions, which she felt were the one thing that her son had responded to. So, in a sense, this was also positive.

Many of the parents were very insightful about the processes involved in the treatment and felt that they, as well as the children, had gained confidence and new ideas.

4.4.4: The Parents' PSIs

The results of the PSIs are included in appendix 4.10.
Table 4.5 shows the PSI results across the ten parents.

Table 4.6: PSI results for the ten parents
(figures are percentile figures)

Children's parents	Total child domain (percentile)		Total parent domain (percentile)		Total stress (percentile)	
	Pre-treatment	Post-treatment	Pre-treatment	Post-treatment	Pre-treatment	Post-treatment
W's mother	91	97	70	68	82	88
J's mother	96	98	50	39	81	81
Mi's mother	99+	99+	72	85	98	99+
I's mother	97	98	82	80	93	93
Ma's father	99+	92	6		62	
E's mother	99+	99+	82	79	97	94
R's mother	99+	91	93	72	98	85
M's mother	99+	76	49	30	90	50
H's mother	97	99+	97	96	98	99+
B's mother	93	90	24	23	63	61

The two blank spaces (Ma) are because Ma's father did not fill in the questionnaire for these sections.

I will first make a few comments on individual parents' PSI results taken from Appendix 4.10 and then make some observations about table 4.5.

W's mum's overall stress levels rose very slightly pre- and post-treatment. The areas where scores were higher were mainly in the child domain when thinking about W's distractibility/ hyperactivity and his 'demandingness'. This could be explained by the fact that as W was becoming more engaged and communicative, he also became somewhat more distractible and demanding.

J's mother's overall scores were exactly the same in the pre- and post-treatment PSI scores. However, total child and total parent domain figures showed that the child domain figures went up from the 96th to the 98th percentile whereas the parent domain figures went down from the 50th to the 39th percentile. In the child domain, the area that went up the most was her stress levels regarding how much J reinforced her attempts to engage with him. Perhaps her expectations in music therapy sessions went up and she was therefore working harder and became more demanding in this area. In the parent domain she felt more competent (stress levels in this area from the 75th to the 55th percentile) and generally happier (depression down from 35th percentile to 12th percentile).

For Mi's mother, results of both pre- and post-treatment PSIs showed very high overall levels of stress. I felt very grateful to her for filling out and returning the second PSI form, given how angry and let down she felt about the sessions ending. It was positive that in spite of her feelings of frustration she continued to co-operate with us. Also it should be noted that in the parent domain, although the percentile figures go up from 72 to 85, even the higher figure is only just outside the middle 'normal' bracket.

'I's mother's overall levels of stress pre- and post-treatment are almost identical to one another. There is a very slight increase (from the 97th percentile to the 98th percentile) in the child domain and a very slight decrease in the parent domain (82nd percentile to the

80th percentile). This might be explained by 'I's mother's increased involvement with 'I' in the sessions, but the differences in scores are only small.

Ma's father was unfortunately not able to fill in the second half of the second questionnaire. He said he had trouble understanding the questions. In the children's domain, all of the scores went down slightly on the second PSI, bringing the scores down from the 99th + percentile to the 92nd percentile. This could have been a reflection of him feeling that Ma had made real progress.

E's mother's overall stress levels went down slightly, pre- and post-treatment, from the 97th percentile to the 94th percentile. In the child domain the principal area where her stress levels diminished were regarding E's responses and feedback to her ('reinforces parent', from the 96th percentile to the 65th percentile). This could be explained by E's increased use of language and the fact that he had become slightly more adaptable and 'easy-going'. In the parent domain her stress levels regarding her own competence as a parent and her feelings of depression decreased, reflecting her own increased confidence, and her generally more relaxed outlook. Surprisingly, her stress levels regarding E's attachment to her rose from the 25th percentile to the 80th percentile. On the one hand E's mother was proud and pleased about the fact the E was becoming more independent at nursery and was able to develop relationships with adults other than her, such as myself. On the other hand it can not have been easy to realise that he no longer needed her quite so much and perhaps she was anxious that their relationship would no longer be so strong.

R's mother's overall levels of stress decreased from the 98th percentile to the 85th percentile before and after music therapy treatment. These results match up with her very positive feedback in the post-treatment semi-structured interview and indicate that she benefited considerably from taking part in music therapy sessions with R.

M's mother's overall levels of stress fell from the 90th percentile to the 50th percentile, which is a considerable reduction. The biggest changes were in the child domain, where

her concerns about M's hyperactivity went down from the 96th percentile to the 20th percentile and her concerns about his moods went down from the 85th percentile to the 35th percentile. Some of these changes were probably due to the fact that she felt M had changed since she had put him on a gluten-free diet. However, her post-treatment semi-structured interview indicated that perhaps music therapy contributed to her being able to listen to M and help him to understand and accept his own difficulties a little.

H's mother's overall levels of stress in both pre- and post-treatment questionnaires were very high. Although she was able to be positive in the post-treatment semi-structured interview, she clearly remained very concerned about H. Her stress levels regarding his adaptability rose (from the 50th to the 96th percentile), possibly as he was nearing the time when he would need to start school. However, her anxiety about his attachment to her decreased slightly (from the 25th to the 15th percentile) which matched up with her generally being more relaxed and initiating and singing more in the sessions.

B's mother's overall levels of stress were quite low and only changed very slightly (from the 63rd percentile to the 61st percentile) pre- and post-treatment. Mostly the figures were all slightly reduced pre- and post-treatment. However, in the child domain, her concerns about B's ability to adapt went up from the 70th to the 80th percentile. In the parent domain her anxiety regarding 'being isolated' went up from the 50th to the 75th percentile, and her concerns about her spouse went up from the 55th to the 65th percentile. All these increases could be partly explained by the arrival of B's younger brother four months after treatment started.

To summarise:

Table 4.5 shows that all the figures in the child domain are very high except for M's mother's post-treatment figures. This is understandable as all the children have a diagnosis of autism and it would be surprising if parents were not concerned about the children's difficulties.

The parent domain figures vary much more indicating that parents' general circumstances and general levels of stress are very different from one another. Most of the parents' overall levels of stress vary very little pre- and post-treatment. However R's and M's mothers levels of stress were considerably reduced pre- and post-treatment.

4.4.5: A personal overview of each of the dyads results

4.4.5.1: W

In general, W's results were positive. His levels of engagement during music therapy treatment sessions rose and his mother became significantly more involved in the sessions herself.

The amount that W played instruments in the sessions decreased. Nevertheless, his music therapy report (appendix 4.8.1) indicated that the main focus of the work was on improving various aspects of W's communication. For W, playing the instruments with me and his mother was a way of focusing on interacting with us. As his communication skills increased, the amount of time he actually played the instruments diminished.

Although W did not make significant improvements in the amount of vocal sounds or words he was making in music therapy sessions, his mother's significantly increased singing and general confidence in W's abilities encouraged her to sing more with him at home. The post-treatment interview with W's mother indicated that she was particularly pleased to be able to share songs with her son.

4.4.5.2: J

J and J's mother only showed significant changes in one aspect, (J's playful movement). This could be explained by the fact that J responded very positively to interactive music-

making right from the very beginning of treatment. Perhaps the challenge here, was to maintain this high level of interaction, which the treatment certainly did achieve. J's mother mentioned in the post- treatment semi-structured interview that she had been struck by how well J interacted with me in music therapy sessions. Perhaps another positive sign was that as the sessions progressed, this level of communication in music therapy sessions continued and gradually generalised to other areas of his life.

As the music therapy report in Appendix 4.8.2 indicates, part of the focus of the work with J was to improve the quality of our interactions and increase the reciprocity of our exchanges. The present analysis of the data does not allow me to evaluate such subtle changes, but it may be that we will see further results when the data is analysed in greater detail in the future.

J's playful movements decreased as sessions progressed. However, this result could be seen in a positive light. Initially J was very active and mobile and many of our exchanges took place 'on the move'. Later it was possible to maintain a high level of interaction, but without J needing to be quite so mobile.

4.4.5.3: Mi

Initially, it looked as though there were very few significant changes in Mi's behaviours in music therapy sessions. However, a closer look at the data indicated that one atypical session was obscuring changes. This new interpretation of the data showed that Mi had become significantly more engaged as sessions progressed and had gradually interacted more with his mother, indicating that two of the original aims set out for him had been achieved. Although Mi's vocalisations in music therapy sessions varied from session to session and did not change significantly, it was interesting to note in the post-treatment semi-structured interview that Mi's mother felt that he was vocalising more before and after music therapy sessions towards the end of the treatment.

Mi's mother was clearly under a lot of stress and openly angry that the music therapy sessions were stopped. During the sessions she was sensitive and caring to Mi, intuitively

picking up on the subtleties of non-verbal sound exchanges. It was interesting to observe that she took the initiative significantly more in sessions as treatment progressed.

4.4.5.4: 'I'

In general 'I's results were quite positive. Her use of words increased inside and outside music therapy treatment and she and her mother became more involved with each other as sessions progressed. 'I's negative behaviours increased after an initial 'honeymoon' period, but her levels of engagement remained constant. The amount she played instruments also decreased. As 'I's talking and engagement with her mother increased, the amount of time she played the instruments diminished.

'I's mother became more actively involved with 'I' both in music therapy sessions and at home. This is particularly positive as 'I's mother had talked about feeling guilty about not doing enough with 'I' in the pre-treatment interview.

4.4.5.5: Ma

Ma's results were mixed. In some ways he had positive results because his responses to me significantly increased. However, neither his levels of engagement or his use of words significantly increased.

Ma's father's levels of playing significantly decreased which was important as his playing had been quite overwhelming and intrusive at times. In the post-treatment semi-structured interview Ma's father showed that he had picked up on how important it was to follow Ma, and that he was doing this with him at home as well as in the music therapy sessions. Although it might seem as though this is only a small aspect of the work, I felt this change in Ma's father's attitude towards his son, could have major consequences not only on the quality of their relationship but also on Ma's behaviour in general.

4.4.5.6: E

E's results were positive in that his use of spontaneous words significantly increased. Nevertheless, he did not become significantly more engaged. In view of the fact that he

had a history of difficult and controlling behaviour, it is probably an achievement that his levels of engagement remained constant and that his negative or rejecting behaviour did not increase. The music therapy report and the semi-structured interviews with his mother indicate that he managed to continue to enjoy the sessions all the way through the treatment.

E's mother's levels of engagement with E decreased as sessions progressed. Although this could be seen as a negative outcome, I felt that it was a positive sign as it meant that she was able to relax more as sessions continued and not feel she needed to 'do' so much. This is confirmed by the PSI results that indicate that her stress levels regarding her attachment with E went up pre- and post-treatment. I see this as a natural phase for any mother to go through as she experiences her toddler growing up, forming attachments outside the home and generally becoming more independent. For E's mother, who had been so intensely involved with E because of his communication problems, this was particularly difficult. Perhaps music therapy sessions helped E's mother to come to terms with her son's growing independence. The fact that her general stress levels decreased slightly during this period support this suggestion.

4.4.5.7: R

R's results were positive. His levels of engagement increased which meant that the first two aims set in his music therapy report (Appendix 4.8.7) were at least partially achieved. These two aims were: 'to increase the amount of time R could remain engaged with me in any one activity' and 'to increase R's interest in communicating with me, focussing on interactive exchanges and eye contact'. However, the length of his average and 'highest' playing bouts did not increase (see table Ap.4.38 in Appendix 4.9.7) and the video-analysis was not able to measure R's eye contact.

The video analysis results indicate that R's mother's involvement in the sessions decreased, which means that the aim for R 'to support R's mother in her efforts to interact with R' did not seem to have been achieved. However, the semi-structured interviews show that this was a choice made by R's mother who wanted to sit back and

enjoy watching R interacting with me. The PSI results as well as the post-treatment semi-structured interview show that R's mother's stress levels decreased and that she felt she and R had both benefited from music therapy sessions.

4.4.5.8: M

M's results were mixed. His playing and his interactions with his mother decreased. However, even though his negative behaviours increased considerably, his levels of engagement remained constant. Perhaps the freedom he was allowed to express his feelings of frustration, made it possible for him to remain engaged. Also, for some children like M it can be useful when they are able to show their 'rebellious' sides in music therapy sessions as this then allows the music therapist to try to understand and manage these behaviours with the parent. This appears to have been a very beneficial experience for M's mother whose stress levels diminished quite dramatically pre- and post-treatment.

4.4.5.9: H

H's longest playing bouts increased in length. However, there were no significant changes in his other behaviours. H's mother's levels of engagement and her singing increased, and she felt very positive about the treatment. As well as enjoying the sessions with her son, she seemed to have been able to pick up many aspects of the non-verbal communication I was using in the sessions, and, as a result, was having fun interacting with H through sound exchanges.

4.4.5.10: B

Overall, B's results were very positive. He made significant improvements in almost all areas and his mother's levels of initiating in the sessions also significantly increased. His mother was very pleased with his progress in the post-treatment semi-structured interview. It was surprising that B continued to do so well in music therapy sessions in

spite of major changes occurring in his life, including the birth of a baby brother and the family moving house. Perhaps it was particularly important for B and his parents that the music therapy sessions remained predictable and well structured and that they continued throughout the time when so many other major changes were taking place for the family.

4.5: Review of main findings in this chapter

One of the interesting things about this research investigation was that I studied ten children and their parents in depth, using four ways of gathering information: music therapy reports, video analysis, semi-structured parent interviews and the PSI questionnaires for parents. I obtained different information from these methods of collecting data, which gave me a very complete picture of each of the dyads.

The music therapy reports were generally positive, indicating that I felt music therapy had been useful and that the children and the parents had responded well to treatment.

The video analysis showed some positive changes for each of the ten dyads. Considering that all the children were on the autistic spectrum, and that the period of intervention was relatively short (18 to 26 weekly sessions), this was a very positive result.

However, the music therapy reports tended to be more positive than the video analysis data. M, for example, did not show many significant improvements in the video analysis, although the music report was generally positive.

There could be several explanations for the differences in these data.

First of all, the video analysis and the way I have analysed the data does not show subtle changes in the quality of communication between the child and the parent or between the child and myself. I was not able to measure increases in eye contact or turn taking skills, for example.

Secondly, some children's 'negative' behaviours may increase in music therapy sessions without this necessarily being a sign of deterioration. If children are feeling cross or rebellious it is a positive sign that they can express these feelings within the music therapy sessions. Parents can benefit from seeing another adult 'dealing' with these behaviours and may gain ideas of new management strategies.
Thirdly, my music therapy report will purposely focus on positive aspects of the child's and the parent's behaviour as this is part of my general approach. This does not mean that I ignore or underestimate the difficulties families are experiencing, but rather that I try to help to put these difficulties in perspective and remind the families of the things that are working.

The video analysis also showed that, for a number of the children, as their levels of engagement increased, the amount they actually played the instruments decreased. Although this makes sense, this was not a result I had expected and may have implications for my approach in the future which I will explore in chapter 6.
It was also very exciting to find from the semi-structured interviews that all the parents felt positive about the music therapy treatment. The video analysis confirmed this finding, as some aspects of seven out of the ten parents' interactive behaviours changed significantly. Two of the parents whose behaviours did not change were the mothers of M and R, who both chose to take a 'listening' rather than an 'active' role within the sessions. It is interesting to note from the PSI results that these two mothers' stress levels went down considerably pre- and post-treatment indicating that they also benefited from the treatment.

When looking at the ways in which I distributed my time in music therapy sessions, I was surprised to find how much I vocalised in the sessions. It was also interesting to find that, overall, I spent roughly the same amount of time playing the piano as 'other' instruments and the same amount of time playing the clarinet as 'moving playfully'. Nevertheless the proportions varied for each dyad. Having looked in such detail at this material it may now be possible to use the pie charts in section 4.4.2.7 as a 'norm' or a 'characteristic' way

that I distribute my time. Other possible music therapy research regarding time distribution by music therapists will be explored further in Chapter 6.

At the beginning of this project my main research hypotheses were that:

- Progress towards achieving identified aims for each of the children could be identified over a period of 18 to 26 weeks.
- Across the ten children, it would become clear that music therapy was effective at achieving some aims, and less effective at achieving other aims.
- Patterns showing how progress is achieved over time would become clear.
- Parents' patterns of interactions with their children, or perceptions of their children may change during the course of treatment.

I have clearly been able to confirm hypotheses one, two and four and have learnt a considerable amount about my work in the process. Hypothesis three has not been so clearly demonstrated, apart from the fact that I was able to identify that a number of children went through a 'honeymoon' period before exhibiting negative behaviours in music therapy sessions. Perhaps longer treatment periods would be necessary before patterns of behaviour over time become apparent.

Chapter 5 :: Croft Experimental Project: Music Therapy Diagnostic Assessments

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5.6: Review of main findings in this chapter

5.1: Introduction

As I have explained in Chapter 3 (3.4), the Music Therapy Diagnostic Assessments (MTDA) at the Croft Children's Unit were developed in order to assist the clinical team with the diagnoses of 'borderline' children suspected of having Autistic Spectrum Disorder. As the Croft children's Unit gradually focussed more on assessing children's difficulties rather than on long-term treatment for children and families, the music therapy sessions also had to concentrate more on assessment rather than treatment. At weekly management meetings at the Croft, I found that I often had different opinions to those of the rest of my colleagues in the team about the children on the Unit, especially when assessing children with possible Autistic Spectrum Disorder. In particular, it seemed that the MTDA's were sometimes able to find out about the children's abilities to communicate non-verbally more quickly and effectively than other tests were.

The review of the literature in Chapter two showed that not many music therapists have written about or researched the use of music therapy to assist diagnoses. It therefore seemed logical to set up a research project in this area.

At the Croft Unit for Child and Family Psychiatry, one of the principal 'tests' used for children suspected of being on the Autistic Spectrum is the Autism Diagnostic Observation Schedule (ADOS) which is described in detail in Chapter 1 (1.7). As this is a very imaginative test relying heavily on creative interactions with the tester I thought that it would be interesting to compare the results of the MTDA to the results of the ADOS. I wanted to compare the MTDA not only to the test that was in current use at the Croft Children's Unit but also to a test that I felt was effective and good at capturing children's attention.

In this chapter, I first explain how this project was set up, then outline the methodology I used and go on to examine the results of the study. Finally the main findings of this investigation are reviewed.

5.2: Background

5.2.1: How the project was set up

My first step when considering this investigation was to talk to the members of the Croft Unit team. As I had worked at the Unit as a music therapist since 1987, I knew the staff very well and music therapy was well-established and recognised as a valuable contribution to the work on the Unit. In addition, I had already carried out one music therapy research project at the Croft between 1996 and 1998 and collaborated closely with members of the Croft team in this venture. (Oldfield, Bunce and Adams, awaiting publication). The staff were, therefore, very supportive and interested in this research proposal. The consultant psychiatrist on the Unit, Jo Holmes, was not only very encouraging, but agreed to fill in questionnaires after the ADOS tests and also consented to be one of my research supervisors, focussing particularly on the clinical aspects of my research investigation. It was felt that the fact that Jo Holmes was simultaneously a colleague, an assessor in the project and a research supervisor would be helpful rather than cause any difficulties. This was partly because our roles within the team were already well-defined and our two research assessments were carried out independently of one another. In addition, we knew that my other two research supervisors at Anglia Polytechnic University, Helen Odell Miller and Shirley Prendegast had no direct involvement in the research procedure and could view the whole project in a more detached way. Malcolm Adams, who is a clinical psychologist and currently Co-Director of the Doctoral Training Programme in Clinical Psychology, University of East Anglia, also agreed to act as research consultant.

With help and support from the Croft team and from Malcolm Adams, I then wrote an outline of my proposed investigation, which I used both when I was applying for the Music Therapy Charity Millennial Fellowship and when I sought approval from the Cambridgeshire and Huntingdon Health Authority Local Research Ethics Committee.

5.2.2: Ethical Approval

In July 2000, I sent completed application forms, a five-page description of the proposed investigation and suggested consent forms and research information for parents to the Cambridge Local Research Ethics Committee. Consent forms and information sheets are included in Appendix 5.1 and 5.2. Only children whose parents had signed the consent form and been presented with the information sheets were to be included in the project. The Committee replied at the end of the month requesting information about whether or not I would be 'blinded' to the results of the ADOS tests when carrying out the MTDA tests and also enquiring why I hadn't provided information sheets for the children themselves.

I was able to reassure them on the first point explaining that I would be 'blinded' to the results of the ADOS test. In fact, this was usually very easy as my MTDA assessments nearly always took place and were scored before the ADOS was performed.

In response to the second point I devised an information sheet and consent form for the children (see Appendix 5.3 and 5.4) but requested that I should be able to use the Croft team's advice whether or not it was appropriate to use these forms with individual children. I wanted to make sure that the forms were only used with children who could make sense of the procedure as it could have been quite distressing for children with significant reading or writing difficulties to be asked to read or sign a form. It could also have been upsetting and embarrassing for the parents of these children. Nevertheless, I made sure I made it clear to the ethical committee that the research process was explained to children in the most appropriate manner possible and that children would not be included in the project if it was felt that they might be distressed in any way.

In October 2000, the Cambridge Local Research Ethics Committee approved the project, (see Appendix 5.5).

5.3: Methodology

5.3.1: Overview of the study design

The aim of this investigation was to find out whether Music Therapy Diagnostic Assessments (MTDAs) were effective at highlighting important aspects of behaviour which are symptomatic of (or exclude) a diagnosis of autistic spectrum disorder.

The ADOS has been described in detail in Chapter 1 and the MTDA has been explored in Chapter 3. In this Chapter I will be describing the similarities and differences between these two tests.

30 children receiving both MTDAs and ADOS tests were included in this study. This number of children was chosen because it was anticipated that this was the number of children with suspected autistic spectrum disorder that would be admitted to the Croft Unit for Child and Family Psychiatry in the time available for the investigation. A system of scoring MTDAs which is similar to the system used to score ADOS tests was devised. The scores for the two tests were then compared.

After each assessment the MTDA and ADOS testers were given a questionnaire regarding how effective they felt the test had been on that day for that particular child. The consultant psychiatrist, Jo Holmes, usually filled in this questionnaire for the ADOS and I completed the questionnaires about the MTDAs. Answers to these questionnaires were collated and compared.

The children were given structured interviews after each MTDA and ADOS test by the music therapy research assistant. Results of these interviews were gathered together and compared.

5.3.2: The choice of the research design

This investigation was carried out at a Psychiatric Unit and it was therefore important that treatment and assessments proceeded as usual and that the pattern of diagnostic tests was not changed for the purposes of this investigation.

Before this investigation was started, children suspected of having Autistic Spectrum Disorder who were admitted to the Croft would routinely receive two Music Therapy Diagnostic Assessments (MTDA) and an Autistic Diagnostic Observation Schedule (ADOS) test. The parents of the children would also be offered an Autistic Diagnostic Interview (ADI). In addition, the children and families would be assessed by the Croft team in a variety of settings such as the Unit School, the Croft playground, various therapeutic groups, at meal times and for those families who were residential, at night time and in the evenings and early mornings.

I felt that I would be able to evaluate the Music Therapy Diagnostic Assessments by comparing the results of the second of these two assessments to the results of the ADOS. I used the second of the two MTDAs because during the first MTDA the emphasis was often on familiarising the child with the musical instruments and the concept of free improvisation, whereas in the second MTDA I could focus more clearly on the diagnostic assessment. I did not consider using an average score of the two MTDA sessions because each of the MTDAs served a different function. The MTDA and the ADOS were similar enough to be compared. Nevertheless, I was aware that the final diagnoses and report that was written on each child was not only based on MTDA and ADOS results but on the findings of the team as a whole. This is why I have also examined ADI results as well as the diagnoses written in the children's discharge reports.

I was also interested in finding out how the people doing the tests felt about the effectiveness of the assessments. I therefore devised a questionnaire that was the same for both the MTDA tester and the ADOS tester. The people who administer tests usually have clear ideas about which part of tests are particularly useful and which questions

provide interesting answers. By answering questions straight after each test, I thought I would gather interesting information, which might well give me ideas as to how to improve my MTDAs for future use.

In addition, I wanted to know what the children felt about the tests and devised a semi-structured interview for the research assistant to use with the children after the MTDA and ADOS test. I wondered whether children found music therapy assessments unusual or intimidating and whether they enjoyed the playful nature of the ADOS tests.

I decided to investigate 30 children receiving ADOS and MTDA tests at the Croft over a period of two years. This number was big enough to allow me to estimate the effect size of the relationship between the two assessments. For practical reasons, carrying out the experimental work over a period of two years meant that I would have time to analyse and write up my results within the three year period of my research fellowship.

My results were subjected to statistical analysis. I used the SPSS computer software to help me with my calculations and the Microsoft Excel programme to draw charts and diagrams.

5.3.3: The children

As soon as I received ethical approval in October 2000, I started approaching the families of children admitted to the Croft who were suspected of being on the Autistic Spectrum, to ask whether they would consent to take part in this research project. The Croft team told me when a new child with possible Autistic Spectrum Disorder was admitted and gave me some basic information about the family. I then approached the child's parent or carer while they were on the Unit, explained about the project, gave them the information sheet and asked them to sign the consent form. If the parent wanted time to think about giving consent I suggested that they could return the consent form on the following day. Sometimes, I saw the parent and the child at the same time and I showed the child the special information sheet for children and asked the child to sign the children's consent

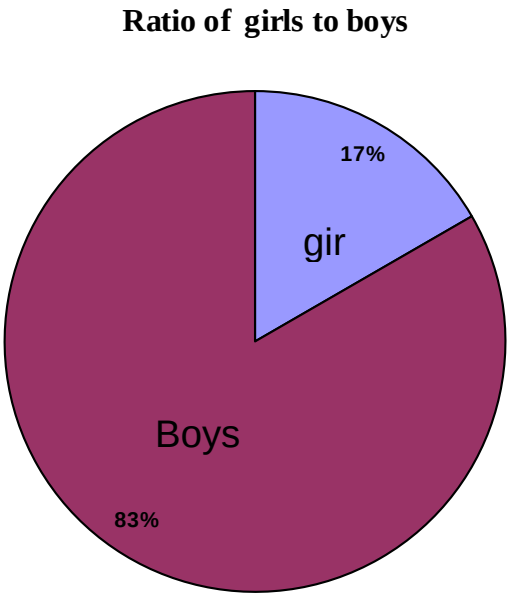
form. At other times, particularly when the child had obvious difficulties with reading and writing, I asked the parent to go over the information sheet for the child at another time and suggested that the child might like to draw a cross or a picture on the consent form. On a few occasions, when I was not available at the right time, another member of the Croft team went through the information sheets and consent forms with the families.

Although more than two out of three of the children on this project were diagnosed as being either on the Autistic spectrum or borderline Autistic Spectrum, all these children were verbal and most of them attended mainstream school and were not severely learning disabled. It is possible that it is because of the relatively high abilities of these children, that clear diagnoses had not been made previously.

Table Ap.5.1 in Appendix 5.6 shows the date each child had their second MTDA, the child's age, sex and diagnosis.

Chart 5.1, (Ratio of girls to boys) illustrates that the majority of children seen on this research project were male with only five girls compared to twenty five boys.

Chart 5.1



Total number of children: 30

The children varied in ages from 4 to 12. The following Chart 5.2, shows that although the children were fairly well distributed in terms of their ages, there were slightly more children between the ages of 7 to 9 and 10 to 12 than in the younger bracket between 4 and 6.

Chart 5.2

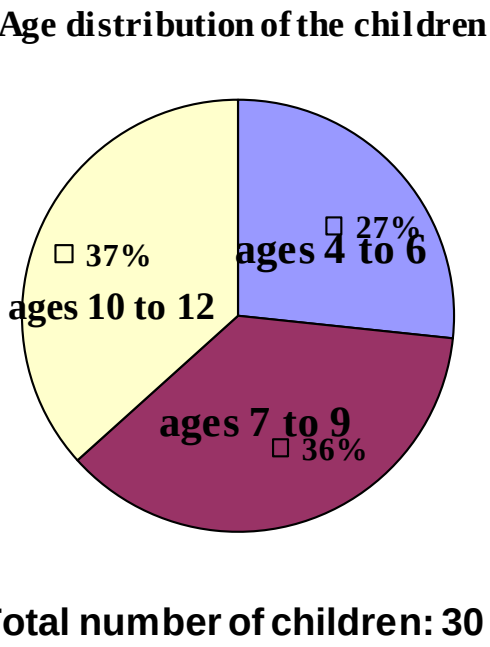


Table Ap.5.1 in Appendix 5.6 also shows that between November 2000 and June 2001 only six children were seen. This was because during that period very few children with suspected autistic spectrum disorder happened to be referred to the Unit. As I was concerned that I would not be able to meet my target of thirty children by the end of July 2002, I decided to extend my recruitment procedure and also include children who attended an out-patient Asperger Clinic at the Croft in my research project. This Clinic caters particularly for children who have or are suspected of having Asperger Syndrome. Asperger Syndrome is a subcategory of autistic spectrum disorder and is defined in Appendix 1.3. Slightly adapted new information sheets and consent forms for parents and children were devised and ethical approval was obtained from the Cambridge Local Research Ethics Committee for this slight alteration in the research protocol. I also decided to continue working over some of the summer weeks in July 2001 so that I could see three additional children who had been admitted to the Croft over the summer holidays.

In the Autumn of 2001 and then in 2002, many more children with possible autistic spectrum disorders were admitted to the Croft, so in the end, only 4 children from the Asperger clinic were included in the project. The majority of the children (26 out of 30) included in the project were children who were referred to the Croft Children's Unit.

5.3.4: Measurements

5.3.4.1: ADOS

All the children who had the ADOS test in this research investigation were verbal and Module 3 for children who are verbally fluent was therefore used. This test is described in detail in Chapter 1.

There were twelve activities in the ADOS and thirteen activities if you include the break. Although the 'break' was not an activity as such the child was assessed during this 'free' period even though the tester appeared to be writing notes and not observing the child. However, the scoring system does not relate directly to these activities but rather to specific difficulties that might become apparent through these activities.

The twelve activities were:

- Construction task
- Make-believe play
- Joint interactive play
- Demonstration task
- Description of picture
- Conversation / non-routine event
- Cartoons
- Story from a book
- Emotions
- Social difficulties / divergence

(Break)

- Friends, loneliness plus marriage
- Creating a story

The eleven points that are scored in the ADOS Scoring Sheet are listed under two categories: communication and qualitative impairments in reciprocal social interaction. For both these categories an 'Autism' cut-off point and an 'Autism spectrum' cut-off point was indicated.

The ADOS Scoring Sheet is included in Appendix 5.7.

5.3.4.2: MTDA

The MTDA has been described in detail in Chapter 3. For this research investigation I had to devise a way of scoring these assessments that could be compared to the scoring system used in the ADOS.

Like the ADOS test, the MTDA includes different activities, but although some activities are included in every assessment the choice of activities is adapted to each child and varies slightly from assessment to assessment. Occasionally an activity might be repeated.

For most children, eight or nine of the following activities are included in the MTDA. Activities marked with a star * are almost always included in the sessions; three or four of the other activities are chosen depending on each child's preferences and the child's strengths and weaknesses.

- Hello song *
- Act of choosing *
- Child on large percussion *
- Child on wind instrument
- Improvised story

- Child on violin
- Child and music therapist play small percussion on floor together
- Child and music therapist share an instrument such as the bass xylophone or the autoharp
- Kazoo dialogue
- Piano dialogue
- Child and Music therapist play an instrument each, sitting on chairs *
- Child plays electric organ or another instrument and music therapist listens
- Music therapist teaches child a tune
- Goodbye on bongos *

In order to decide how to score these assessments, I tried to formulate questions which I felt I was able to answer through these activities rather than evaluating each activity individually. The experience of having tried out these MTDA's over a number of years at the Croft Children's Unit was invaluable at this stage. Having discussed many children who had been through MTDAs with the team I already had some clear ideas about what types of information I felt my assessments were good or 'quick' at gaining about the children. I was also particularly interested in pin-pointing those areas where I felt I often disagreed with the other assessments that had been carried out on the Unit.

After several attempts and trials and much debate with other members of the Croft Team I came up with the following scoring system, which I used for the thirty children involved in this research investigation. In Appendix 5.8 I include my full Music Therapy Diagnostic Assessment which also gathers information on other areas of difficulty the children may be experiencing which may not be symptomatic of ASD. Although I will only be studying questions a) to l) in this investigation, I had to answer all the questions for all the children as my research work overlapped with my clinical work at the Croft. As a clinician I needed to reflect on the children's general strengths and weaknesses in order to feed back more clearly to the team in management meetings at the end of the week.

The cut-off points were chosen to be similar to the cut-off points in the ADOS test. The cut-off point for autism was set at 6, and the cut-off point for autistic spectrum disorder (which would include Asperger Syndrome and Pervasive Developmental Disorder of a non-specific type) was set at 10.

It must be remembered that this scoring system was developed especially for this investigation and has not been tested or tried out in great depth. I expect that in the future the scoring system will be modified and improved as more music therapists try to use it.

Scoring of Music Therapy Diagnostic Assessment (for Autistic Spectrum Disorder)

Score in the following way: 0 = None of this behaviour was noted
1 = Some of this behaviour was noticed
2 = A lot of this behaviour was noticed

NB: Only score if you are certain you noticed some of the behaviour. If in any doubt do not score.

Autism Spectrum Disorder categories:

a) Child's playing seems to be independent of therapist's playing. Therapist has to work hard to 'remain' with child and child often seems to be doing his/her own thing.

Score:……

b) Child is not facially or physically engaged in playing process, or unusual eye contact (too little or too much).

Score…….

c) Child doesn't make *any* spontaneous suggestions (musical or verbal) with communicative intent / story is excessively simple showing inability to be creative or imaginative (this should not be caused by a general learning disability, but appear untypical of the child's overall ability)

Score…….

d) Child is unusually interested in structure of instruments / lines instruments or beaters up / 'twiddles' with beaters or shakers / uses beaters in unexpected ways e.g. puts them in holes, sticks them on head….

Score…….

e) Child becomes self absorbed and difficult to distract from certain instruments

such as the wind chimes or the ocean drum. (Not boredom or distractability but a more isolated, engrossed type of playing, with possible repetitive playing)

Score…….

f) Child's tone of voice/intonation has an unusual or repetitive quality.

Score…….

g) Child is unable/unwilling to make up a story where we both contribute to the story line. Child may be unwilling to make up a new story rather than telling a well-known story, or child may refuse to allow the therapist to contribute in any way.

Score…….

h) Child develops obsessive/repetitive types of playing/ or obsessive repetitive patterns in story.

Score…….

i) Child is unable to have more than one/immediate copying response. The exchanges don't develop into a dialogue.

Score…….

j) Child is unable to have any playful or humorous exchange with the therapist.

Score…….

k) Child wants entire session to be on his/her terms and can't accept any ideas or suggestions from the therapist. (Not in a calculated manipulative way but rather in an 'own world' way.)

Score……

l) Child does not show a response to therapist's singing. No embarrassment or smile or communicative response. (Do not score if child is choosing to reject or ignore the therapist and showing a negative response.)

Score……

Total:……

Cut-off points: Autism: 10
Autism Spectrum: 6

5.3.4.3: Comparison between MTDA and ADOS tests

There were some obvious similarities and differences between the MTDA and the ADOS tests and scoring systems.

Both tests lasted half an hour to forty-five minutes and focused on the interactions between the tester and the child. The ADOS test focused on interactions through play and through verbal interactions. The MTDA focused on interactions through music-making. The module 3 ADOS test we were using in this investigation probably included more verbal interactions than the MTDA.

Although the ADOS test was interactive and playful, some parts of the assessment could be seen by the child as being quite like a traditional test where the child is presented with a construction task or a puzzle to complete. In reality, the tester was not concerned with whether or not the task was completed but more with how the child approached the task and if he or she spontaneously sought help from the adult. Similarly, some children expected the music therapist to teach them a tune or how to play an instrument. Again the tester was more interested in the process of learning rather than the acquisition of a skill.

In both the ADOS and the MTDA the child may have pre-conceived ideas about what will happen in the assessments. In the ADOS, which at the Croft is usually administered by a medical doctor, the child may assume that he or she will be medically examined or asked questions about his or her health. In the MTDA the child may expect to be taught a musical instrument or asked to sing.

There were some very obvious overlaps between the ADOS and the MTDA. For example, in both tests the children were asked to make up a story.

The ADOS test was a 'one-off' test whereas the MTDA was done over two half-hour sessions usually held on a weekly basis. Nevertheless it was decided that for the purposes of this investigation only the second MTDA would be used and scored. The first MTDA was felt to fulfil the function of familiarising the child with the musical equipment and the somewhat unfamiliar process of improvising freely with the tester. However, the fact that the child would have already met the music therapist and would have had an MTDA did not 'bias' the results in favour of music therapy for the purpose of the investigation. This was because the child would also usually have met and become familiar with the

person carrying out the ADOS at outpatient and pre-admission appointments. In both the ADOS and MTDA, the person carrying out the test was a member of the Croft Team but not one of the main nursing staff. So the child would have seen and met the adult who carried out the test but wouldn't have know them very well.

The ADOS always included the same thirteen activities although occasionally an activity might have been be left out, sometimes due to time constraints and sometimes because a child was particularly uncooperative. The MTDA usually included around nine or ten activities but, although five 'core' activities were almost always included, the others varied from child to child.

In the ADOS, all the activities were suggested by the tester, and the activities were presented in a set sequence. However, there could be flexibility within each of the activities and the tester may have been able to give the child the impression that he or she was making a choice. In the MTDA the child and the tester took it in turns to choose activities and the way the child made these choices was a central part of the test.

Both the ADOS tests and the MTDAs were videotaped. The room where the ADOS was held had a camera on the wall which was operated from another room, whereas the MTDAs were videotaped by the research assistant, who was in a corner of the room with the child and the tester.

The scoring systems for the ADOS and MTDAs also had some points in common. In both scoring systems most of the questions related to ways in which the child was communicating and interacting with the adult. In the MTDA scoring system, however, questions d, h and e (see section 5.3.4.2 earlier in this Chapter) which related to unusual use of objects or stereotyped forms of playing the instruments were included in the main part of the test. In the ADOS, on the other hand, questions 12,13,14,15 and 16 relating to these areas were outside the 'core' part of the scoring system (see section 5.3.4.1 earlier in this Chapter). Nevertheless, question 1 in the ADOS system included stereotypes and idiosyncratic use of words and phrases and as the MTDA focused mainly on musical

rather than verbal forms of communication it seemed logical to include this aspect in the main body of the MTDA scoring system.

Table 5.1 shows how questions from the MTDA scoring system (second column) overlap or correspond in some way with questions from the ADOS scoring system (first column). Sometimes the questions asked don't match up exactly but might be looking at similar types of difficulties.

Table 5.1:

Overlaps and similarities between the categories in the ADOS and MTDA scoring systems

ADOS scoring categories	MTDA scoring categories
1) (A4) Stereotyped/idiosyncratic use of words or phrases	f) Unusual or repetitive quality of tone of voice/intonation h) Obsessive/repetitive types of playing or patterns in story
2) (A7) Reporting of events	
3) (A8) Conversation	c) Lack of spontaneous musical or verbal suggestions with communicative intent / inability to be creative
4) (A9) Descriptive. Conventional. Instrumental gestures	b) Lack of facial or physical engagement in playing process / unusual eye contact
5) (B1) Unusual eye contact	
6) (B2) Facial expressions directed to others	
7) (B6) Insight	
8) (B7) Quality of social overtures	k) Child wants session to be on his or her terms

9) (B8) Quality of social response	l) No communicative response to therapists singing j) difficulties having playful or humorous exchanges with adult g) Difficulties making up 'common' story
10) (B9) Amount of reciprocal social communication	i) Child is unable to have more than one immediate copying response. Exchanges don't develop into a dialogue.
11) (B10) Overall quality of rapport	a) Child's playing independent of therapists playing
12) (C1) Imagination / Creativity	c) Lack of spontaneous musical or verbal suggestions with communicative intent / inability to be creative
13) (D1) Unusual sensory interest in play material/person 14) (D2) Hand and finger and other complex mannerisms 15) (D4) Excessive interest in highly specific topics or objects 16) (D5) Compulsions and rituals	d) Unusual interest in structure or shapes of instruments / lining up beaters, twiddling shakers e) Child is self absorbed and difficult to distract from certain instruments h) Child develops obsessive/repetitive styles of playing or telling stories

The letters and numbers that appear at the beginning of the ADOS categories refer to the code used for that category in the ADOS scoring sheet, (see Appendix 5.7).

In this table I have tried to look at similarities in the individual categories scored in the ADOS and the MTDA assessments. Some categories such as: '2) (A7) reporting of events in the ADOS' do not have an equivalent area in the MTDA. When categories don't match up specifically to one another I have sometimes grouped questions together. On several occasions I have matched the same MTDA question to different ADOS categories because the MTDA question seemed to cover both the ADOS areas. For example, c) in the MTDA is matched both to 3) as well as 12) in the ADOS.

The MTDA b) was not matched up with the ADOS 6) in spite of the fact that both categories looked at 'unusual eye contact' because the ADOS category looks specifically

at how the child links eye contact with speech. 4) (ADOS) and b) (MTDA) both refer to non-verbal physical communication and are therefore paired up in this table.

Similarly the ADOS 6) relates specifically to facial expressions directed towards other people rather than general use of facial expression to show intent or involvement which is more the focus of MTDA b).

Only the first 11 questions in the ADOS form part of the scores that determine the Autism and Autism spectrum cut-off scores. However, questions 12 to 16 are always scored and will form part of the descriptive data when reporting back about the test.

I will refer back to this table again in the 'results' section of this chapter.

5.3.4.4: Testers' questionnaires

In addition to gathering information about the children's strengths and weaknesses from the MTDA and ADOS scoring sheets, I thought it would useful for the people administrating the tests to fill in a questionnaire after the session. In this questionnaire, the people administrating the tests (myself and usually the consultant psychiatrist Jo Holmes) answered questions about how useful they felt each individual activity within the test had been.

I devised a form where each of the activities in the test could be listed and evaluated in the following way: 'a' (4) for very effective; 'b' (3) for effective; 'c' (2) for not very informative or 'd' (1) for useless.

On the second page of the form there were three more general questions which were:

- Did the person carrying out the test feel that they administered the test well?
- What were the limitations of the test?
- Particular immediate impressions of child: what stood out?

Finally there was a question for staff members that might have been observing the test which asked whether the child behaved in an expected or unexpected way during the session. A blank tester's questionnaire is included in Appendix 5 9.

Although an attempt was made to fill in the forms straight after the sessions, this wasn't always possible. Nevertheless, we were able to use the test results, children's notes and videorecordings of the sessions to help us remember our impressions when our memories needed to be refreshed.

5.3.4.5: Children's structured interviews

After each MTDA and ADOS, the research assistant asked each of the children some questions about the session they had just had. For a few children (C9s, C10s and C11s), when the research assistant was not available, another member of staff from the Croft did the interviews after she had explained the procedure to them.

In spite of our efforts, not all the children were interviewed after the MTDA and ADOS experimental sessions. This was because some children were reluctant to be interviewed and also because it was not always possible to find a member of staff who was available to interview the children.

I felt that it was important for the research assistant rather than the music therapist (myself) to carry out these interviews as the child was more likely to give true answers to a neutral person rather than to the person who had just run a music therapy diagnostic assessment with them.

The research assistant conducted interviews after each of the two music therapy MTDA sessions and after the ADOS test. As I am mainly using the data from the second MTDA session for this research project, I will only include the data from the second MTDA children's interviews here. Had I known at the beginning of the investigation that I would only be analysing the second MTDA sessions I probably would not have arranged for the

research assistant to conduct an interview after the first MTDA session. Having the two interviews after the MTDA sessions had the advantage of keeping the two sessions similar in structure for the children. However, it had the slight disadvantage that some questions that were included in the post ADOS test were left out in the interview following the second MTDA sessions, because the child answered the same questions the previous week after the first MTDA session. An example of such a question might have been "have you done these types of activities before, at school or at home?" Nevertheless, this was not a major difficulty as most of the questions related directly to the session that had just occurred.

I devised a sheet with questions for these interviews which is included in Appendix 5.10. It is important to note, however, that these sheets were only used as guidelines. Often, the research assistant had to work hard to maintain the children's interest and questions would sometimes be left out if it was felt they were not appropriate for a particular child.

5.4: Results of the study:

Table Ap.5.2 is included in Appendix 5.11. This table shows the adjusted MTDA scores, the ADOS scores and the Croft diagnoses for each child.

Before comparing the MTDAs, the ADOS tests and the Croft Diagnoses, I looked at whether the MTDA and the ADOS tests were reliably differentiating between the three different diagnoses reached by the Croft on discharge.

5.4.1: Significance of the diagnoses reached by the ADOS and the MTDA tests

The data from Table Ap.5.2 in Appendix 5.11 was entered into spreadsheets in the SPSS computer programme and subjected to statistical tests. I used mostly non-parametric statistical tests because the scores in the ADOS and the MTDA tests were not evenly

distributed as is shown in Chart Ap.5.1 and Chart Ap.5.2 (MTDA score distribution, ADOS score distribution) in Appendix 5.12 and Appendix 5.13.

Table Ap.5.3 in Appendix 5.14 shows the means and the standard deviations of the scores. It is encouraging to find that the mean for the three diagnostic categories rises progressively with the severity of the diagnoses both for the MTDA and the ADOS tests.

I then applied the Kruskal-Wallis Test to these results. (Table Ap.5.4 in Appendix 5.15). Siegel (1956) gives advice to researchers regarding which are the most appropriate significance tests to use. This test was used to determine whether the scores reached on each of the two tests were differentiating between the three diagnostic categories in numerically significant ways. The aim of this test was to eliminate the possibility that the results occurred by chance.

The results of the test showed that both for the ADOS and the MTDA tests the scores relating to the three diagnoses are significantly different with $p < .05$.

This was not surprising for the ADOS which is an established assessment tool, but very encouraging for the MTDA which we were investigating here. This result showed that the MTDA was clearly differentiating between the three diagnostic categories in a way which corresponded to the Croft diagnosis given to children on discharge.

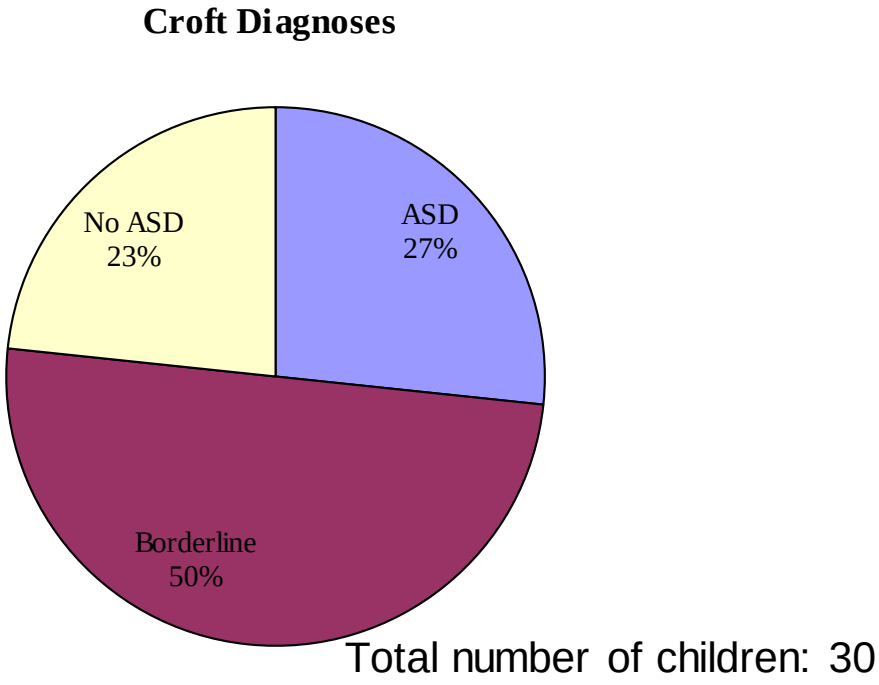
5.4.2: Comments on the different diagnoses

Table Ap.5.5 in Appendix 5.16 (Agreement/disagreement between diagnoses) translates the MTDA and ADOS diagnoses into numerical scores and looks at the agreements and disagreements between the outcome of the three systems of diagnoses.

Before discussing the statistical analyses of the MTDA and ADOS scores in more depth, I would like to make some comments from this table about the Croft diagnoses in the last column of the table and reflect on how the ADOS and MTDA match up or differ with

these diagnoses. However, the following comments depend on MTDA 'cut-off' points which are 'supposed' rather than 'proven' cut-off points. When I originally developed this assessment tool I inserted cut off points which were similar to the ADOS cut-off points.

Chart 5.3



When referring to the diagnoses in the last column of table Ap.5.5 in Appendix 5.16, Chart 5.3 shows that 50% of the children had borderline diagnoses, 23% were not on the Autistic Spectrum, and 27% had a diagnoses of Autistic Spectrum Disorder.

The following Table 5.2 is drawn from Table Ap.5.5 in Appendix 5.16.

Table 5.2 Summary of agreements and disagreements between tests

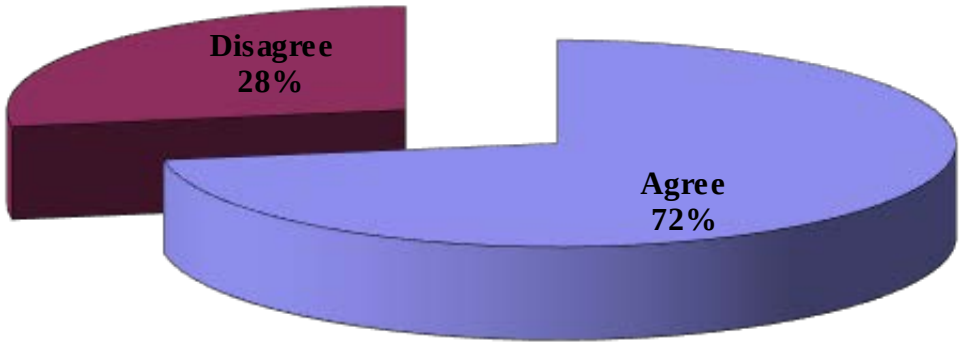
	MTDA and ADOS	MTDA and Croft Diag.	ADOS and Croft Diag.	MTDA, ADOS and Croft Diag.	MTDA **or** ADOS and Croft Diag.
Number of children where tests agree	21 (72 %)	19 (63 %)	19 (65 %)	16 (55 %)	24 (83 %)
Number of children where tests disagree	8 (28 %)	11 (37 %)	10 (35 %)	13 (45 %)	5 (17 %)

The total numbers of children in each column sometimes add up to 29 and sometimes to 30. This is because although I had 30 experimental subjects, one of the children refused to co-operate in any way in the ADOS test and could therefore not be scored for that test.

The first column in this table shows that the MTDA and the ADOS tests agreed on their diagnoses for 21 out of 29 children. This is illustrated in the following chart 5.4.

Chart 5.4

MTDA and ADOS agreements and disagreements



Despite what this chart shows, Table 5.2 also indicates that neither the ADOS or the MTDA scores always matched up with the Croft diagnoses given to the child on discharge. 19 out of 29 ADOS scores matched up with the diagnoses and 19 out of 30 MTDA scores matched up with the diagnoses. These scores are illustrated in the following two charts 5.5 and 5.6.

Chart 5.5:
ADOS and Croft
Agreements and disagreements

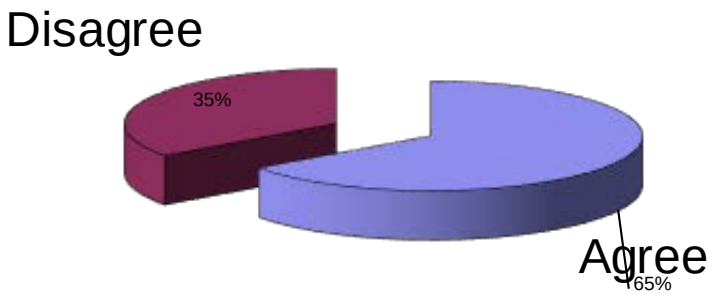
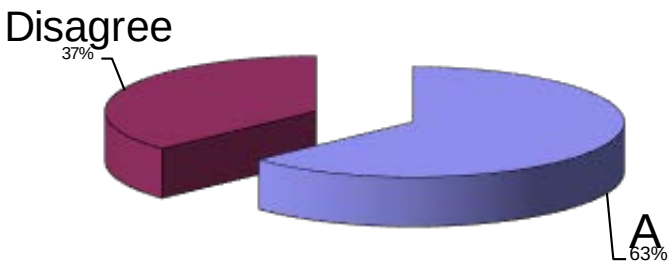


Chart 5.6:
MTDA and Croft
Agreements and disagreements



It is interesting to note from these charts that the percentage of agreement reached by the MTDA was very similar to that reached by the ADOS. This shows that the Croft team took the results of the relatively new MTDA's as seriously as those of the more established ADOS test.

It is also interesting to note from table 5.2, that the agreement between the MTDA and the ADOS was higher than the agreements between the Croft diagnoses and either of these two tests. Perhaps this is an indication that these tests are quite similar to one another, or at least more similar to one another than to other forms of assessment performed at the Croft Children's Unit.

Only 16 out of 29 children had MTDA and ADOS scores that both matched up with the diagnoses that they were given. (See Table 5.2 – column five). In one way this is not surprising as the Croft diagnosis is very different from the individual MTDA and ADOS tests and consists of a combination of assessments. These assessments include the MTDA and the ADOS tests as well as interviews with the parents of the children and observations of the children by nursing staff and teachers in a wide variety of settings

(see Chapter 3, section 3.3.1). On the other hand, it might have been expected that the consultant psychiatrist who makes the final decision about the Croft diagnosis would be more influenced by the ADOS test which she usually administered herself. What these findings show is that the MTDA and the ADOS are only a part of the whole picture at the Croft and that many other factors and informal evaluations will influence the final diagnoses given.

I thought it might be interesting to see whether the children whose diagnoses we all agreed or disagreed on came from the same diagnostic groups.

The following Chart 5.7 looks at how the children whose diagnoses we agree on are distributed in terms of diagnoses.

Chart 5.7

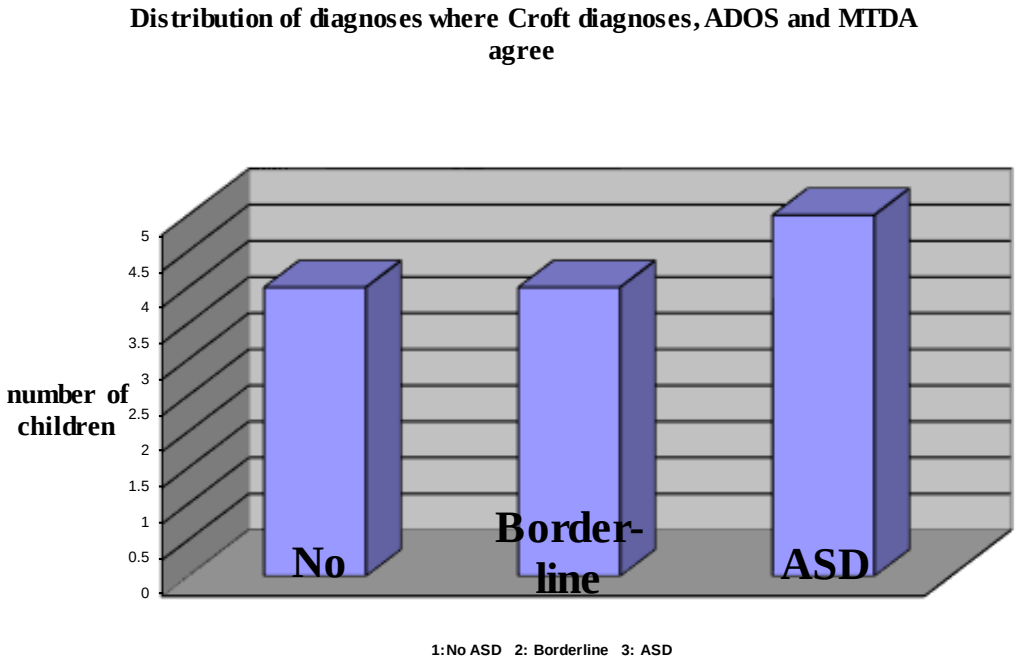
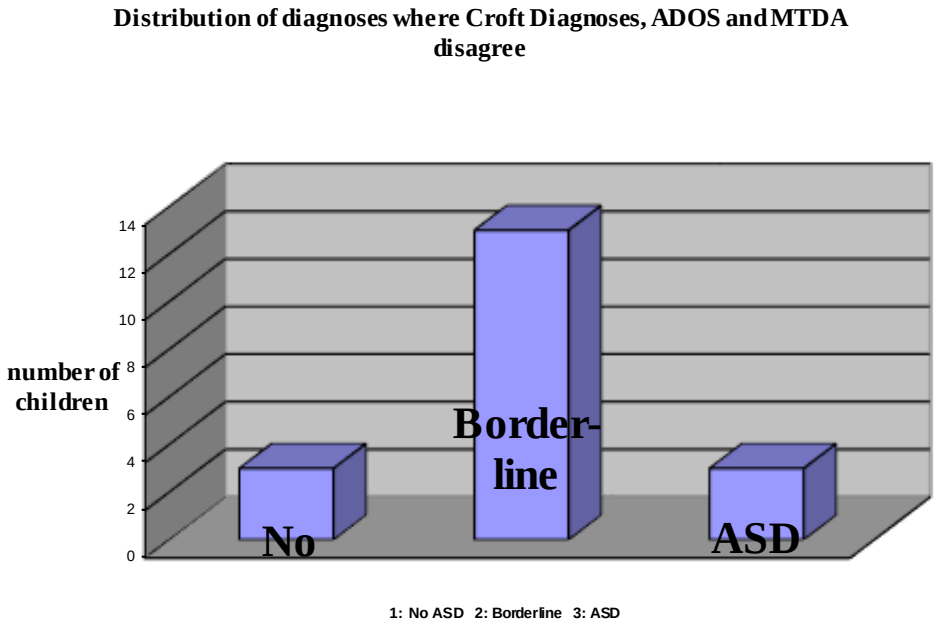


Chart 5.7 shows that the children where the ADOS, the MTDA scores and the Croft diagnoses agree, are evenly distributed amongst ASD children, borderline children and non ASD children.

Chart 5.8 looks at how the children where the MTDA and the ADOS scores disagreed, either with each other or with the Croft diagnoses, are distributed in terms of diagnoses.

Chart 5.8

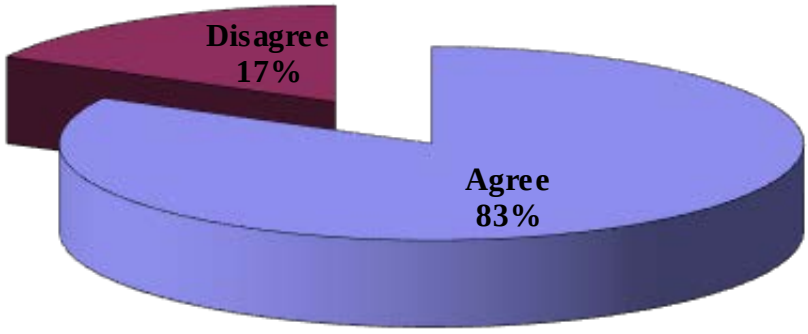


Here it is clear that disagreements were more likely to occur in children who had borderline diagnoses rather than in children who were diagnosed as having ASD or as not having ASD. This confirms that children who are borderline are the most difficult to diagnose.

The last column of table 5.2 is illustrated in chart 5.9.

Chart 5.9

Agreement and disagreement between MTDA *or* ADOS with the Croft Diagnosis



This shows that there are only 17% of children where the Croft diagnoses does not agree either with the MTDA results or the ADOS results. Clearly the Croft works as a team, takes note of each different assessment but considers each child carefully before deciding which pieces of information should inform the diagnosis.

This section has focused on the diagnoses emerging from the MTDA and the ADOS tests and on the similarity and differences between these diagnoses and the Croft Diagnoses given on discharge. I am now going to look more closely at the actual scores from the MTDA and ADOS tests and subject some of these scores to statistical analyses.

5.4.3 Analyses of MTDA and ADOS scores

The descriptive statistical SPSS data on the MTDA and ADOS tests is included in Table Ap.5.6 in Appendix 5.17. This data is drawn from the figures in Appendix 5.11 (Table Ap.5.2.).

This descriptive data shows that the mean score for the ADOS (7.00) is higher than the mean score for the MTDA (5.083).

I then used the Wilcoxon Signed Ranks Test to look at whether there was a significant difference between the MTDA and the ADOS scores. This test is included in Table Ap.5.7 in Appendix 5.18.

The last figure in table Ap.5.7 shows that p = .012. As p is smaller than .05 the difference between the ADOS and the MTDA results is statistically significant. As the mean showed, the ADOS scores are higher than the MTDA results. In other words, the ADOS is scoring more 'autistic' behaviours than the MTDA.

This result, combined with the comments on the different diagnoses in the previous section, confirm that the MTDA is providing different information than the ADOS to the Croft diagnostic team.

This information could confirm the hypotheses that the MTDA is picking up on the children's non-verbal types of communication and is therefore less likely to judge that the child's behaviour is autistic. In order to find out where the differences between the two tests lie, I will now compare groups of questions from each of the two assessments.

5.4.4: Analyses of subsections of MTDA and ADOS

Table 5.1 (included earlier in this chapter) shows the overlaps and similarities between different categories in the ADOS and the MTDA scoring systems. Nine groups of questions from the ADOS and the MTDA were similar enough to be compared. I subjected the scores from these tests to statistical analysis. These nine similar scoring categories are taken from Table 5.1 and included in Table 5.3.

Table 5.3: Nine similar scoring categories in MTDA and ADOS tests

ADOS scoring categories	MTDA scoring categories
1) (A4) Stereotyped/idiosyncratic use of words or phrases	f) Unusual or repetitive quality of tone of voice/intonation h) Obsessive/repetitive types of playing or patterns in story
3) (A8) Conversation	c) Lack of spontaneous musical or verbal suggestions with communicative intent / inability to be creative
4) (A9) Descriptive. Conventional. Instrumental gestures	b) Lack of facial or physical engagement in playing process / unusual eye contact
8) (B7) Quality of social overtures	k) Child wants session to be on his or her terms
9) (B8) Quality of social response	l) No communicative response to therapists singing j) Difficulties having playful or humorous exchanges with adult g) Difficulties making up 'common' story
10) (B9) Amount of reciprocal social communication	i) Child is unable to have more than one immediate copying response. Exchanges don't develop into a dialogue.
11) (B10) Overall quality of rapport	a) Child's playing independent of therapists playing
12) (C1) Imagination/Creativity	c) Lack of spontaneous musical or verbal suggestions with communicative intent / inability to be creative
13) (D1) Unusual sensory interest in play material/person 14) (D2) Hand and Finger and other complex mannerisms 15) (D4) Excessive interest in highly specific topics or objects 16) (D5) Compulsions and rituals	d) Unusual interest in structure or shapes of instruments / lining up beaters, twiddling shakers e) Child is self-absorbed and difficult to distract from certain instruments h) Child develops obsessive/repetitive styles of playing or telling stories

I applied the Wilcox Signed Ranks Test to each of the nine lines in this table. The results of the tests are included in Appendix 5.19. Seven of the pairs of categories showed no significant differences in their ADOS and MTDA scores (see table Ap.5.8 in Appendix 5.19). Two pairs of categories showed significant differences in the ADOS and MTDA scores. These were:

- ADOS category 8) corresponding with MTDA category k), looking at social overtures by the children.
- ADOS categories 13), 14), 15) and 16) corresponding with MTDA categories d), e) and h) looking at ritualistic/obsessive behaviour.

I also applied descriptive statistical tests to these two pairs of categories (see table Ap.5.9 in Appendix 5.19). These tables showed that the mean score for the ADOS questions in the first pair was higher than the MTDA score, whereas it was lower for the second pair.

In some ways this confirms the original idea that the MTDA is seeing more 'non ASD' communicative behaviours in children than the ADOS is. However, as children may be more engaged and communicative in the MTDA sessions they also might 'let down their defences' more and display more ritualistic and obsessive behaviours as is shown by the data from the second of the two significantly different categories. It might also be that the music-making is more stimulating and exciting than play situations and that the children show more obsessive behaviours as they become more stimulated.

5.4.5: MTDA and ADOS Testers questionnaires

The results of the MTDA testers questionnaires are included in Appendix 5.20, Table Ap.5.10.

This table shows that:

- Although the number of activities I use in the MTDA sessions varies from 4 to 11, I usually include about 8 or 9 activities.

- The total number of times an activity was used (penultimate line – tot.us) shows that some activities such as the 'Hello activity' (hel), 'the act of choosing' (ch), 'large percussion and piano (lp.p), 'instrumental dialogues' (i.di) and 'Goodbye activity' were used almost every week whereas other activities were only used occasionally.

- Two activities 'improvised story' and 'teaching a tune' were consistently felt to be very useful to the diagnostic process.

The results of the ADOS testers questionnaires are included in Appendix 5.20, Table Ap.5.11.

The ADOS schedule three activities for children who were verbal varied less than the MTDAs and were almost always the same every week. Sometimes, when children were very resistant to being tested or when there were time pressures, a few of the activities were left out or the order in which the activities was presented was slightly changed.

5.4.6: Comments on and comparison of the results of the MTDA and ADOS testers questionnaires

Question 1: Was the test an effective tool?

Both testers of MTDA scores and ADOS scores thought that most of the activities they used were useful for diagnostic purposes. This is shown by the prevalence of 3s and 4s in tables Ap.5.10 and Ap.5.11, (Appendix 5.20).

I subjected the means of the scores for each of the children to statistical analysis in Appendix 5.21, Table Ap.5.12 and Ap.5.13. The results show that my scores were significantly higher than those on the ADOS test. This indicates that I felt my test was slightly more effective than the ADOS tester thought her test was. In some ways this is

understandable because I was enthusiastic about my new MTDA assessment procedure. On the other hand I knew the psychiatrist carrying out the ADOS was also convinced by the value of the ADOS test and had noticed excitement and interest on her part when I had observed her carrying out these tests before this investigation began.

The ADOS test included more activities in each test than the MTDA did. This is interesting as I was slightly concerned that I was trying to include too many things in my test rather than spending time encouraging a child to spend more time on individual activities in a more traditional music therapy way. It was reassuring to find that the ADOS included even more activities than the MTDA.

The descriptive questions in the second part of the test are listed in Appendix 5.22. I will describe the answers to each of the questions one after another.

Question 2: Did the person carrying out the test feel they administered the test well? (Answer Yes or No)

The prevalence of 'Ys' for 'Yes' in Table Ap.5.14 (Appendix 5.22) shows that both the ADOS and the MTDA testers generally felt that they administered the test well. However, the ADOS tester did answer 'no' on six occasions (out of a total of 28 answers) whereas the MTDA tester (myself) only answered 'not sure' on two occasions (out of a total of 30 answers).

Question 2: Did the person carrying out the test feel they administered the test well? (Comment)

The comments in this section vary greatly. It is not surprising that many of the comments made were questioning the ways in which the testers were carrying out the test as comments would probably not have been added here if the tester felt that the test had been totally straightforward to carry out. This probably explains why comments were only made about some of the children. The following table 5.4 shows that if I attempt to

categorise the comments made as 'Negative' (N), 'Bland' (B) or 'Positive' (P) I find that there are more negative comments made about the ADOS test than about the MTDA test.

Table 5.4: Nature of the comments made in answer to the question: "Did the person carrying out the test feel they administered the test well?"

ADOS		**MTDA**	
Child	Type of comment	Child	Type of comment
C1	N	C1	P
C2	N	C2	P
C3	N	C3	P
C5	N	C7	N
C12	N	C9s	P
C13	N	C16	N
C15	P	C18	N
C16	N	C22	N
C21	B	C23	B
C22	N		
C23	N		
C28	N		

From this table it looks as if the MTDA tester (myself) had a more positive outlook regarding her test than the ADOS tester. However, it must be remembered that although the Consultant Psychiatrist (Jo Holmes) did most of the ADOS tests, a number of the ADOS tests were done by Senior Registrars in training. It is, therefore, understandable that these Senior Registrars might have been less confident about administering the test than I was about administering the MTDA.

Question 3: What were the limitations of the test?

ADOS testers commented that the test was often difficult to administer because children refused to take part and were very oppositional. This difficulty was only mentioned once by the MTDA tester. ADOS also mentioned that some children had trouble focusing for the entire test. Conversely, other children needed more time than the test allowed to answer all the questions fully. Another subject that came up several times in the ADOS test was specific difficulties that children experienced with the verbal parts of the test.

In some ways it is understandable that most of these difficulties were not mentioned in relationship to the MTDA. The MTDA is less clearly structured than the ADOS and can be much more 'child led' than the ADOS can. Thus, children who like to feel they are in control would struggle less and find it easier to focus in a setting where they had more choice and leadership. In addition, there are more opportunities to interact and communicate non-verbally for those children who struggle with language.

A difficulty that was mentioned in the MTDAs but not in the ADOSs was the fact that some children felt embarrassed and self conscious. This is easily explained as some children would find it difficult not to feel they were 'performing' when playing musical instruments.

Question 4: Particular immediate impressions of child

Appendix 5.22 shows that this question was answered for almost all the children for both the ADOS test and the MTDA. I will attempt to draw out important themes by listing the children's strengths and difficulties that were often mentioned, in Tables 5.5 and 5.6.

Table 5.5: Children's strengths and difficulties mentioned by the ADOS Testers

ADOS

Strengths	Difficulties
Good conversation	Difficulties with verbal language
Chatty	Lack of social language
Sociable	Difficulties with social awareness
Good sense of humour	Lack of social understanding
Creative / imaginative	Lack of imagination
Good insight	Lack of insight
Socially approaching	Anxious / inhibited
Very articulate	Learning difficulties / socially immature
Lots of facial expressions	Controlling / rigid / stuck
Good eye contact	Hyperactive / lack of concentration
Co-operative	Oppositional / uncooperative

Table 5.6: Children's strengths and difficulties mentioned by the MTDA Tester

MTDA

Strengths	Difficulties
Communicative	Not communicative / no dialogues
Able to copy and initiate	Unable to sustain communication
Spontaneous / free in playing	No spontaneity / stuck
Interactive	Speech difficulties
Warm / affectionate	Emotional difficulties / anxious
Humorous / playful / sense of fun	Lack of confidence / self conscious
Creative / imaginative	Self-absorbed
Musical	Odd facial expressions
'Sparky'	Clumsy
Confident	Learning difficulties
Sensitive	Distracted / hyperactive / impulsive
Sense of achievement	Testing boundaries / controlling / defiant

Clearly there are a lot of similarities between the themes mentioned by the ADOS and the MTDA testers. However, it appears that in the ADOS there is a greater emphasis on spoken language and the MTDA tester focuses more specifically on various aspects of non-verbal communication. The MTDA tester also focuses more on the spontaneity (or lack of spontaneity) in the children, whereas the ADOS testers pick up on the children's abilities (or lack of abilities) in social understanding.

Question 5: Reaction of research assistant regarding whether child behaved in an expected or unexpected way during the session, (only relevant to MTDA's).

As the research assistant was present during most of the MTDAs videoing the sessions, and as she saw all the children at the Croft for weekly group music therapy sessions she was able to answer this question. As well as giving us additional information about the MTDAs this also gave us some insight in the different ways in which children might behave in group and individual music therapy sessions. Table Ap.5.15 in Appendix 5.22 shows that out of the 20 children she videoed, 12 behaved in slightly unexpected ways in the MTDA sessions. This is quite a large number if one considers that the research assistant had been working as a music therapist with this client group for a number of years and had experience of how children behaved in both group and individual music therapy sessions. This suggests that this group of children often behave differently in individual music therapy sessions and group music therapy sessions.

Her comments indicated that, in general, children often felt more relaxed in one-to-one sessions (MTDAs), were able to focus more easily and were more interactive. She mentioned several times that this might have been because group sessions were often difficult because of other children in the group who could be quite disturbed and disruptive. However, she felt that two of the children (C13 and C17) were less confident in the one-to-one sessions than in the group session.

5.4.7: Comments on the answers given by the children in the Structured Interviews

As indicated in section 5.3.4.5 earlier in this chapter, it was, unfortunately not possible to interview all the children after their MTDA and ADOS assessments. Appendix 5.23 shows which children were interviewed. To summarise this information, 18 children were interviewed after both their MTDA and their ADOS sessions, a further 7 children were interviewed after their MTDA sessions, 1 child was interviewed after his ADOS session and 4 children were not interviewed at all.

The results of the MTDA and ADOS questionnaires are included in Appendices 5.24 and 5.25. In order to comment on these results I have made some general points and then commented on the results in both the MTDA and the ADOS questionnaires taking each section of questions in the interview one at a time.

General comments

The 'general comments' by the interviewer show that the children sometimes had difficulties remembering the ADOS test, whereas the MTDA session often immediately preceded the interview and was therefore easier to talk about. Sometimes children struggled to remain focussed, particularly when being interviewed about the ADOS.

Motivation/interest

Generally, the children appeared to enjoy both MTDA and ADOS sessions. In many cases they couldn't identify anything in the tests they didn't like. In the MTDA sessions, 9 out of 25 children were able to say they didn't like one of the instruments, but they were all positive about some aspects of the session. In the ADOS sessions, 9 out of 19 children expressed a dislike for one or more of the activities, and 3 of those 9 children had nothing positive to say about the sessions. It is interesting to note that out of the nine children who said they disliked one of the musical instruments in the MTDAs, 3 children said that they disliked the instrument because it was too loud.

Most of the children were familiar with at least some aspects of both the ADOS and the MTDA tests. In the ADOS tests, out of the 14 children who answered this question, 3 were totally familiar with this type of test, 4 had done some of the activities before and 6 felt all the material was new. In the MTDAs, out of the 24 children who answered this question, 5 children felt very familiar with this type of session, 16 had played some of the instruments before, and 3 answered that they had never played any of the instruments or games before. This was a little surprising for me, as I had expected children to be a lot more familiar with the ADOS types of test than with MTDA assessments.

Experience of being with another person

Again the responses of the children were mixed regarding how similar the sessions were to previous experiences. I was expecting the children to feed back that the MTDA sessions were more unfamiliar than the ADOS sessions, but this was not the case.

Nearly all the children said they enjoyed taking turns in both tests. There were mixed responses when the children were asked whether they preferred choosing activities or having activities chosen for them. (This question was much more relevant in MTDA sessions than in ADOS sessions where the choices were all made by the tester). In the MTDA, out of the 24 children who answered this question, 12 children preferred choosing themselves, 7 preferred me choosing and 5 didn't mind. In the ADOS, 7 children answered the question, 3 would have preferred to choose if they could have done, 4 didn't mind.

Almost all the children felt the ADOS and the MTDA tests were fun. About half the children questioned in each of the tests preferred playing alone, the other half preferred playing with the tester.

Self esteem/Confidence

Many children needed prompting from the interviewer to help them to acknowledge that they were good at things or that it felt nice to be good at things. Out of a total of 37 questions asked about the MTDA in this section, 28 answers contained a positive element. Out of a total of 25 questions asked about the ADOS, 15 answers contained positive elements. This indicates that it may have been a little easier for children to acknowledge that they felt good about themselves in MTDA sessions than in ADOS sessions.

Perception of other person's feelings

The children generally felt that the testers enjoyed the sessions in both MTDA and ADOS sessions. When asked about what the tester liked best in the MTDA sessions, out of 24 responses, 20 were definite and only 4 didn't know. In the ADOS sessions, out of 18 responses, 8 were definite and 10 didn't know. This is obviously an interesting finding and may reflect that in MTDA sessions, the tester is perhaps more actively involved with the children and more often playing as an 'equal'. Although the tester also plays with the children in the ADOS, the role is that of an 'interested adult' rather than that of a 'fellow musician'.

5.5 Additional studies

5.5.1: The ADIs

23 out of the 30 experimental subjects had Autistic Diagnostic Interviews (ADI) as part of their treatment while they were at the Croft Children's Unit. This assessment tool is very different from the MTDA or the ADOS because it consists of a detailed two to three hour interview with the parent of the child. There are three main sections to the test which are:

- Qualitative impairments in reciprocal social interaction
- Impairments in communication
- Repetitive behaviours and stereotyped patterns

In order to be considered as either Autistic or as having Asperger Syndrome, children have to score on or above the cut-off point for each of the three sections.

Table Ap.5.16 in Appendix 5.26 shows the results of the ADIs for the children taking part in this research project.

In table Ap.5.17 in Appendix 5.27, I compared the results of the ADIs with those obtained from the MTDAs, the ADOS and the Croft diagnoses. However, I am aware that

these comparisons are somewhat rough and must be considered with caution. This is because the ADI measures whether or not a child has Autism or Asperger Syndrome whereas the other three methods of diagnosis are looking more broadly at whether or not a child is on the autistic spectrum. It must also be remembered that these comparisons depend on using the 'hypothetical' cut-off points in my MTDAs, as I explained in section 5.4.2.

The following table summarises the results in table Ap.5.17 in Appendix 5.27.

Table 5.7: Summary of agreements and disagreements between the ADI and the other tests

	ADI and MTDA	ADI and ADOS	ADI and Croft Diagnosis.	All four tests
Number of children where tests agree	14	12	18	8
Number of children where tests disagree	9	10	5	14

Although 23 children had ADIs, one of these children was the one whose ADOS could not be scored. This is why the columns with ADOS scores in them only add up to 22 rather than 23.

This table shows that quite a high proportion of the ADI results disagree with the MTDA and the ADOS results. There is higher agreement, however, between the ADI and the Croft Diagnosis. This could be an indication that the Croft Diagnosis takes account of the opinions of the parents and the families of the children whereas the MTDA and the ADOS are purely assessing the child itself.

5.5.2: Comparison between MTDA 1 and MTDA 2

As explained in Chapter 3, the music therapy assessments at the Croft Children's Unit consist of two half hour sessions, usually held at a weekly interval. When reflecting on the purpose of having two music therapy sessions rather than one, I came to the conclusion that the first session enabled me to get to know the child a little and help the child to feel at ease in a somewhat unusual environment. It was in the second session that I felt I was able to assess the child's strengths and difficulties more effectively. This is why most of the data used in this project focuses on the second of the two MTDA sessions.

Nevertheless, during this research project, I did score the first of the two MTDA sessions as well as the second MTDA session, so I can now compare the results of the scores in the first and the second MTDA sessions. As both sessions serve a different function I thought it would be interesting to see whether this would be reflected in different scores for the first and the second sessions. When I was scoring, I was thinking purely in diagnostic terms rather than considering the first session as one which served mainly as a time to get to know the child.

The results are listed in table Ap.5.18 in Appendix 5.28. I then subjected the results to statistical analysis. (See table Ap.5.19 and Ap.5.20 in Appendix 5.29). P= .04 which is < .05 and shows that there is a significant difference between the scores in the two MTDA's. The mean of the second MTDA is slightly higher than the mean of the first MTDA indicating that I am picking up more autistic-type characteristics in the second rather than in the first test. This result has clinical significance because it confirms that two rather than one MTDA are important for these children. If there had been no significant difference between the two sets of results then it might have been more difficult to justify the necessity of two MTDAs rather than one for each child.

5.5.3: Comparison between the research assistant's MTDA results and the music therapist's MTDA results

When setting up this project I decided that it would be useful for the research assistant to video as many of the MTDAs as possible. We used these videos to discuss children with

the team at the Croft Children's unit and when we needed to check up on the results on the scoring sheets or on the testers' questionnaires. As the research assistant was present in the sessions she was able to fill in the MTDA scoring sheets independently from my scoring of the sessions. She was present for 26 of the 30 sessions which means that we were able to compare our results for these 26 children.

The results are included in table ap.5.21 in Appendix 5.30 and were submitted to statistical analysis, (see tables Ap.5.22 and Ap.5.23 in Appendix 5.31). P = .151 which is > than .05 and indicates that there is no significant difference between our scores.

Table ap.5.21 also shows (column 5, Appendix 5.30) that the research assistant and I agree on our diagnostic categories for 19 out of 26 cases, i.e for 73% of the time. Table ap.5.24 in appendix 5.31 shows that Kappa = .56, which is a reasonable level of agreement, corrected for chance. It is also interesting to note that out of the 7 children where the research assistant and I did not agree on our diagnostic categories, 3 disagreements (C12, C13 and C24) were only one, or half a point, from reaching the same diagnosis. If these three children were counted as having been diagnosed in the same way, our levels of agreement go up to 85%.

This is very encouraging as it indicates that the test is giving similar results even when scored by independent music therapists.

5.6 Review of the main findings in this chapter

The first important finding in the investigation described in this chapter was that the MTDA showed 72 % agreement with the ADOS regarding which diagnostic category a

child was put into. This indicates that the new MTDA procedure was picking up similar information to the established and well-tested ADOS test.

Nevertheless, in addition, the MTDA and ADOS tests both showed significant differences in their total scores. The two tests were clearly picking up different information on the children. The greatest number of disagreements between the two tests was with the 'borderline' children.

The ADOS scores were significantly higher than the MTDA scores indicating that, in general, the ADOS was picking up more autistic-type behaviours than the MTDA was. When comparing individual questions within the MTDA and the ADOS tests, I found that there were only two sets of comparable categories which scored significantly differently. These were 'social overtures by the children' and 'ritualistic behaviours'. The MTDA was less likely to consider the children's 'social overtures' to be autistic but more likely to score autistic-type behaviours when looking at the children's ritualistic behaviours.

In some ways this information ties in with the information gained from the children' s structured interviews and the tester's questionnaires. The children's structured interviews indicated that the children felt slightly less inhibited and more at ease in MTDAs than in ADOS tests, but also at times more self-conscious. The tester's questionnaires indicated that ADOS testers placed more emphasis on spoken language whereas the MTDA testers were more interested in non-verbal communication. The ADOS testers looked more at social abilities and the MTDA tester at spontaneity. The MTDA sessions were less structured and more 'child-led' than the ADOS tests and as a result children were perhaps slightly more at ease and less oppositional. However, the fact that the children were more spontaneous might have explained why they also displayed more ritualistic-type behaviours in the MTDA sessions.

It was encouraging to find that the children's structured interviews indicated that the children mostly thought that the MTDA and ADOS tests were fun. The testers themselves

generally felt that they administered the test well. Both these findings make the two assessments appealing to use and 'user friendly'.

The reliability of the MTDA as an assessment tool was strengthened when I found that the music therapy research assistant's independent scoring of the sessions was not significantly different from my scoring.

The necessity for two as opposed to one MTDA for each child was confirmed when I found that there was a significant difference between the first MTDA scores and the second MTDA scores. It was interesting to find that I was picking up more autistic behaviours in the second rather than the first MTDA test. In addition the children's structured interviews and the testers' questionnaires indicated that a number of children were quite shy and self conscious in MTDAs but often less so in the second MTDA session than in the first.

The other point that should be considered is that this research project investigated a new diagnostic assessment by looking at mostly 'borderline' children rather than including a cross-section of children, which would include a higher proportion of 'normal' children and 'classically autistic' children who are easier to diagnose. In other words the MTDA was put to test with those children that are hardest to diagnose. As the MTDA has given us useful information even with the most difficult group of children to diagnose, it would indicate that the MTDA could be a valuable diagnostic tool for psychiatric teams to include in their assessment packages.

The hypothesis put forward at the beginning of this investigation was that the MTDAs were effective at highlighting important aspects of behaviour which are symptomatic of (or exclude) a diagnosis of Autistic Spectrum Disorder. In many ways this hypothesis has been shown to be correct. Nevertheless, the number of children assessed was too small for there to be significant differences in many of the subcategories of the MTDAs and the ADOS tests.

The findings in this chapter have many possible implications for the future of MTDAs both at the Croft Children's Unit and for other music therapists. These will now be examined in some detail in Chapter 6. The limitations of this investigation will also be reviewed in Chapter 6.

Chapter 6 :: Reflections

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6.1: Introduction

In this chapter I will review the main findings of this investigation. I will focus both on how the findings could be useful to other music therapists as well as on the limitations of the project.

I will reflect on the methodology used and consider what I have learnt about music therapy research methodology from this investigation. I will also make some recommendations or suggestions for other music therapy researchers.

I will then look at how this project brought a number of organisations and people together and reflect on the consequences of collaborating in this way.

This will lead me to the lectures, conferences and publications that have already come out of this research investigation. I will also briefly describe a number of other research projects and the creation of new music therapy jobs that have directly or indirectly been influenced by, or come out of, this music therapy research project.

I will then consider what future publications this project might lead to and also make recommendations for further investigations and research.

Finally, I will reflect on my own personal journey while undertaking this project.

6.2: Main findings

6.2.1: List of results

6.2.1.1: General

- The literature review showed that many music therapists have written about a wide range of approaches to working with children with autistic spectrum disorder.

- A detailed description of my music therapy work both with pre-school children with autistic spectrum disorder and their parents, and my music therapy diagnostic assessments, showed that these two approaches have not been developed or described before.

- The video that accompanies this thesis brought out the eight points that characterise my particular approach with pre-school children with autistic spectrum disorder and their parents.

- The literature, not only by music therapists, but also by many other professionals, indicated that these eight points link in with previous work with children on the autistic spectrum.

6.2.1.2: CDC investigation

- Nine out of the ten dyads achieved some or all of individual aims set out before treatment began.

- Music therapy seemed to be particularly effective at increasing the children's levels of engagement. With a number of children, as the levels of engagement increased, the amount of playing and music making decreased.

- Music therapy was also good at increasing some of the children's use of words and reducing echolalic speech or vocalisations.

- For the three children who had difficulties managing their behaviour, music therapy did not reduce the children's amount of negative behaviours. However, these three children all had a honeymoon period at the beginning of treatment when they showed very few or no negative behaviours.

- All the parents felt that music therapy had been effective.

- None of the parents' PSI questionnaires showed high increases in stress levels pre- and post-treatment. Two of the parents stress levels reduced considerably pre and post treatment.

- A study of the way I spent my time in music therapy sessions revealed that I was generally very active. The amount of time I was 'not playing or attempting to engage' was small (average of 12%) and was similar for most of the children.

- I spent a high proportion of my time vocalising.

- I played the clarinet for similar amounts of time with each of the children. However, the amount of 'playful movement' varied more from child to child.

6.2.1.3: Croft investigation

- The Music Therapy Diagnostic Assessments (MTDA) and the Autistic Diagnostic Observation Schedules (ADOS) showed 72 % of agreement between diagnostic categories.

- The percentage of agreement between the MTDA and the Croft diagnoses and between the ADOS and the Croft diagnoses was very similar.

- However, the MTDA and ADOS showed significant differences in their total scores. The greatest number of disagreements was with the 'borderline' children.

- The ADOS scores were significantly higher than the MTDA scores.

- When comparing individual questions within the MTDA and ADOS tests I found that the MTDA was less likely to consider the children's 'social overtures' to be on the

autistic spectrum, but more likely to score autistic spectrum-type behaviours when looking at the children's ritualistic behaviours.

- The children felt slightly less inhibited but more self-conscious in MTDA sessions than in ADOS sessions.

- The ADOS testers placed more emphasis on spoken language and social abilities whereas the MTDA tester was more interested in non-verbal communication and spontaneity.

- The MTDA sessions were less structured and more 'child' led than the ADOS tests.

- The children thought that both the MTDA and the ADOS sessions were 'fun'.

- The music therapist carrying out the MTDAs and the music therapy research assistant who was present at the assessments reached 73 % agreement on the scoring of the MTDAs.

- There was a significant difference between the scores of the first 'introductory' MTDA and the second MTDA which was the one that was used as data for this investigation.

6.2.2: Importance of these results

6.2.2.1: The results in the context of the literature

As the literature review showed, there has only been a small amount of outcome research in music therapy for children with autistic spectrum disorder. The two outcome investigations in this project, therefore, provide an important addition to outcome investigations in this field.

In the CDC project, I combined factors from four other outcome investigations by Edgerton (1994), Warwick (1995), Plahl (2000) and Holck (2002). Like these four projects, my results were positive. My investigation adds to the body of literature suggesting that music therapy is an effective intervention with children with autistic spectrum disorder. Edgerton (1994), Plahl (2000) and to some extent Holck (2002) were researching well established and published music therapy approaches, (the Nordoff and Robbins music therapy approach and the Orff music therapy approach). So this investigation was unique with Warwick's investigation in researching a 'new' approach (Warwick 1995).

Interestingly, both Warwick (1995) and I came to similar conclusions regarding the 'categories of parents' of children with autistic spectrum disorder, and we also both concluded that it is important and helpful to include parents in treatment sessions when working with young children with autistic spectrum disorder. In the literature review I showed that the importance of working jointly with mothers and young children was supported by literature written by a wide range of different professions.

Plahl's investigation as well as the present project collected data in a variety of ways (Plahl 2000). The unique aspect of my study is that this wide range of data was collected on children with similar diagnoses.

All these outcome investigations have focused on music therapy approaches where the music therapist is generally quite active and at times quite directive. Thus, there is now a strong body of literature suggesting that these 'active' music therapy approaches with children with autistic spectrum disorder are effective. This is not to say that more reflective, psycho-dynamic approaches are not also helpful. However, there are at present no outcome studies to support the effectiveness of this work.

The fact that I found that I spent so much of my time vocalising in music therapy sessions underlines the importance of the work by other music therapists interested in making particular use of the voice, such as Di Franco (1999), Turry (1999) and Heal (1989). The

consistent use of my clarinet-playing with all the children indicates that I was right in expressing surprise that no studies existed by music therapists using single line instruments.

The Croft MTDA study was important because, as far as it has been possible to determine, no outcome investigations exist on diagnostic music therapy with children who are suspected of being on the autistic spectrum. However, descriptions of my MTDAs show that there are some similarities between my MTDAs and the evaluations that Wigram (1995, 1999 and 2000) carried out in his work and those used by Molyneux (2001). Nevertheless, neither Wigram nor Molyneux have set up research projects on their diagnostic assessments.

As this is the first outcome investigation in this area, it was very positive to find that the MTDAs were effective and were serving a useful and distinct purpose within the psychiatric team.

In the wider context of general approaches to children with autistic spectrum disorder, it would appear from my descriptions of my diagnostic work and my work with young children and their parents, that I am combining components from different treatment approaches. On the one hand I incorporate elements of the structured 'TEACCH' method (Notomi 2001), and on the other I also use aspects of the more spontaneous, child centred 'Tavistock Workshop Approach' (Reid et *all*, 2001).

6.2.2.2: The aims and hypotheses of this investigation

The results I have just listed in section 6.2.1 are also important because they show that this project has fulfilled its own aims and confirmed most of the hypotheses set out for the outcome investigations.

At the beginning of chapter 1, I stated that my overall aim was 'to find out more about my work and improve my clinical practice when working with children with autistic

spectrum disorder and their families'. The above results show that I have identified the key points that characterise my approach in two specific areas. The positive results from the outcome investigations have confirmed for me that these ways of working are effective.

In the CDC investigation, it was very revealing and indeed moving for me to listen to the parents' insightful and positive comments on the recordings of the post-treatment semi-structured interviews. Many of the parents felt that the music therapy sessions had helped them either directly in their relationship with their child or given them new understanding about the ways in which they could communicate with their child. Hearing the parents' perceptions of the music therapy treatment strongly reinforced my conviction that it is essential to include the parents in the sessions when working with pre-school children with autistic spectrum disorder.

It was interesting to find out that a number of the CDC children's levels of playing diminished as their levels of engagement increased. This underlines the importance of the quality rather than the quantity of the child's musical involvement.

It was also interesting to find that I was unlikely to reduce children's 'negative' behaviours during music therapy sessions and that the children initially had a 'honeymoon' period before feeling able to show these behaviours. I am now clearer about this aspect of my work, explaining to parents that music therapy sessions can be a useful forum to give vent to feelings of aggression or rebellion and that these behaviours are not necessarily a sign of deterioration. I also point out to parents that as some children become more spontaneous and engaged in their playing and their interacting, they also feel safe enough to rebel and show difficult behaviours.

I was surprised to discover how much I vocalised in the sessions. I have been thinking more about how I use my voice during music therapy treatment since I made this discovery, and have been experimenting with using a greater variety of vocal sounds. I wasn't so surprised to find that I only spent around 12 % (on average) of my time 'not

playing or engaging'. However, it was interesting to discover that this percentage was more or less constant across the 10 children. In general, it is clearly a feature of my interactive approach that I tend mostly to be active and engaged rather than spending large portions of my time listening and observing quietly.

At the beginning of the CDC project my main research hypotheses were that:

- Progress towards achieving identified aims for each of the children could be identified over a period of 18 to 26 weeks.
- Across the ten children, it would become clear that music therapy was effective at achieving some aims, and less effective at achieving other aims.
- Patterns showing how progress is achieved over time would become clear.
- Parents' patterns of interactions with their children, or perceptions of their children may change during the course of treatment.

Hypotheses one, two and four have been confirmed. Hypotheses three has not been so clearly demonstrated, although I was able to identify that a number of children went through a 'honeymoon' period before exhibiting negative behaviours in music therapy sessions. As I indicated at the end of Chapter 4, perhaps longer periods of treatment would show clearer patterns of change.

Thus I now have data and evidence based research to prove that the music therapy approach with young children with autistic spectrum disorder and their parents, which has been described in Chapter 3 and in the video, is effective. I can now teach music therapy students or run workshops or teaching sessions about this way of working with additional confidence and conviction.

Describing my Music Therapy Diagnostic Assessments (MTDA) has helped me to define not only what is included in the MTDAs but also reflect on what purpose each of the activities included in the assessments fulfils.

The fact that there was 72 % of agreement between diagnostic categories in the ADOS and the MTDA meant that my newly developed assessment procedure was producing similar results to the well-established and extensively researched ADOS test.

It was interesting to find that the levels of agreement between the MTDA and the Croft diagnoses and between the ADOS and the Croft diagnoses were so similar. This showed that the Croft team was considering the MTDA results as seriously as the ADOS results.

It was also important to establish that the total MTDA and ADOS scores were significantly different from one another. This means that the MTDA can serve a useful and distinct purpose to the ADOS in the psychiatric team.

When comparing individual questions within the MTDA and the ADOS, I found that the MTDA was less likely than the ADOS to consider the children's 'non-verbal communication' and 'social overtures' to be on the autistic spectrum. However, the MTDA was more likely than the ADOS to score autistic spectrum-type behaviours when looking at the children's ritualistic behaviours. These results were confirmed by the testers' impressions of the assessments. The ADOS testers placed more emphasis on spoken language and social abilities whereas the MTDA tester was more interested in non-verbal communication and spontaneity.

It was very interesting to find out that the scores from my two MTDA sessions on individual children were significantly different one from another. This had important clinical consequences as it confirmed the necessity for two as opposed to one MTDA session for each child, because children need an initial session to get used to using instruments and music-making before relaxing and allowing me to assess their strengths and difficulties.

The fact that there was no significant difference between the music therapy research assistant's independent scoring of the MTDA and my own scoring, and that we reached 73 % of agreement, indicated that the MTDA could be scored in a reliable way by the

person carrying out the test. It also showed that somebody other than myself could learn to score the test in a similar way to the way that I did. Other music therapists working in psychiatric teams might find my MTDA useful to use. Nevertheless, I think I would need to provide some training for music therapists wanting to use the MTDA, in a similar way that ADOS administrators need some training before using the ADOS test.

The hypothesis that was put forward at the beginning of the Croft investigation was that the MTDAs were effective at highlighting important aspects of behaviour which were symptomatic of (or exclude) a diagnosis of Autistic Spectrum Disorder. This hypothesis has been shown to be correct.

I now have data and an evidence-based research project to support my continued use and development of the Music Therapy Diagnostic Assessments.

6.2.2.3: The strengths and limitations of this investigation

Many of the strengths of this project have already been mentioned above. However, I have not yet emphasised two points that I feel are particular strengths of this investigation.

The first is that both of the clinical areas investigated were researched 'in situ' and no aspects of the on-going music therapy work were changed for the purposes of the research. This means that all my results are directly relevant to the work that I am doing.

The second is that as I have researched two quite different aspects of music therapy with children on the autistic spectrum, I have been able to gain specific information from each of the investigations which is of interest to the other area studied, as well. For example, my discovery that I vocalised extensively in the CDC project has made me think about how much I use my voice in the MTDAs. Similarly, the children's feedback from the MTDAs about not liking loud instruments, has made me consider whether some of the younger children might be more sensitive than I thought to loud sounds.

There were some limitations to the Child Development Centre outcome study. I did not have a control group to compare my results with, so it was very difficult to establish whether the children's progress was due to music therapy or just due to maturation. I was not able to control other events in the children and the families' lives such as the children starting to attend nursery groups or other music groups or the children going on a gluten free diet, for example. Again this means that other factors apart from music therapy will have contributed to the children's progress. Nevertheless, at the beginning of the project I made a clear choice to focus more on 'process' rather than on 'effectiveness'. I feel that this project has allowed me to find out a huge amount about what happens in music therapy sessions, which I might not have had time for if I had had to find and evaluate a control group.

Another limitation to this project was that, because of the huge amounts of data that we collected from 222 half-hour videotapes, I was not able to analyse each session in great depth. This meant that I was unable to look at intricate exchanges between the child and myself or the child and the parent, and could not look at turn-taking skills for example. However, we did collect a huge amount of data, which means that it may be possible to analyse the material that I do have in more depth at a later stage.

The main limitation of the Croft experimental project was that I did not have enough data with 30 children to be able to tease out the differences between the subsections of the MTDA and the ADOS. I also would have had a slightly more homogenous group of children and more complete data had I not been obliged to include three 'Asperger Clinic' children as well as three 'Summer Programme' children, in order to make sure that I had 30 children to assess within the allocated period of time. The 'Asperger Clinic' children were out-patients at the Croft which meant that I couldn't use Croft team assessments to compare the MTDA and the ADOS data with. The three children on the 'Summer Programme' were younger than the other children and were seen with their parents, which changed the nature of the assessments a little. Nevertheless, as this was the first outcome study of music therapy diagnostic assessments with children suspected

of having autistic spectrum disorders, it was positive that I was able to meet my target of including 30 children in the research investigation.

Another limitation of the Croft investigation was that I would have needed to investigate larger numbers of children in order to fully investigate the reliability and validity of my MTDA cut-off points.

6.3: Reflections on the methodology

The research project described in this thesis is the third music therapy investigation I have undertaken. All of the projects have been completed and had interesting and positive results. There are a number of points all my research investigations have in common, and I feel that these points could now form the basis for a possible music therapy research methodology for other music therapists thinking about setting up research investigations.

These points were:

- All the projects arose out of music therapy practice.
- All the projects investigated music therapy in a clinical setting as it was being practiced.
- In all of the investigations I worked very closely with the clinical team.
- In all cases, I sought help from various specialists and consultants.
- The researcher was always the music therapist being investigated.
- In all my research I have combined qualitative and quantitative approaches.
- All the projects depended on the music therapist setting clear goals for her clients or (with MTDAs) for herself.
- All the projects except for the MTDA investigation relied heavily on video analysis.

There are many reasons why this approach to research works well. If the researcher is investigating an aspect of music therapy that they are practicing at the time, the research will seem relevant and important. Working closely with the team will strengthen the links

and the trust between the music therapist and the clinical team, and will provide support for the music therapist setting up research.

As I explained in Chapter 1, I have had both a qualitative and a quantitative approach both to this investigation and to all my previous research. In the present investigation I have found that the process of carrying out one piece of work has influenced and affected other aspects of the research. For example: I arranged for my research assistant, to video all the pre-school children with autism and their parents so that we could collect quantitative data and measure behaviour changes. As a result of seeing the video camera, several of the parents asked whether they could have copies of some of the sessions. I agreed to make a video of 'highlights' from the sessions for each of the parents. The process of viewing so many videos of my work and selecting a range of excerpts for each of the parents not only taught me about what seemed to characterise my music therapy approach with these dyads, but also gave me the idea of including a video with this thesis.

Another aspect of the methodology, which has been very successful, is the fact that I have used different methods for collating research results. This meant that when I was looking at my MTDA and the ADOS I gathered data not only from scoring sheets but also from interviews with the children and questionnaires to the people carrying out the tests. As a result I obtained information about differential scores as well as finding out that the children generally enjoyed the assessments and the testers perceived the evaluations as 'user-friendly'. In the CDC project the use of reports, video analyses, semi-structured interviews and questionnaires meant that I was able to get a very complete picture of each dyad.

There are many aspects of this investigation that have relied on working closely with other people or organisations. These collaborations are outlined in Appendix 6.1. All these different types of collaboration ensure that the music therapy investigation is not carried out 'in isolation'. The profile of music therapy is raised because many different people are involved in the research process and the music therapist position in the team is also confirmed and strengthened.

6.4: Research project 'spin-offs'

During the research investigation my research assistant and I were able to attend two international music therapy conferences and one international music therapy research seminar. We presented papers at all these events. In addition, I was recently invited to take part in another international research seminar and music therapy conference in Norway. The details of these events and the papers we presented are included in Appendix 6.1.

In addition I gave a number of lectures and papers either directly or indirectly linked to this research project. These are listed in appendix 6.2.

Many of these papers or research presentations have been published. All the publications either directly or indirectly relating to the research project are listed in Appendix 6.3.

In February 2002, I organised a research conference at Anglia Polytechnic University where I encouraged music therapists who had recently started up research ventures to present papers. It was gratifying to hear that quite a number of music therapists attending the conference had been inspired by the Conference to start pursuing research investigations themselves. The brochure from this conference is included in Appendix 6.4.

In the conclusion of my previous investigation into music therapy with mothers and young children I mention that carrying out research projects can have a stimulating effect on other staff working alongside those researchers, (Oldfield, Bunce and Adams 2003). This certainly seems to have been the case at the Croft Children's Unit where two other researchers have been inspired to set up investigations involving music therapy in the last two years. These two ventures are briefly described in Appendix 6.5.

Another very exciting 'spin-off' from this research investigation has been that, while Emma Carter has been employed on a temporary basis both to work as a music therapy

research assistant and to replace my clinical hours, she has managed to create two permanent one day music therapy posts at the Croft Children's Unit and at the Child Development Centre. As a result of this research project, the music therapy service has grown and will be able to treat more patients and expand the service from September 2003 onwards. This shows how research projects such as this one can lead to the creation of further music therapy work.

6.5: Future ventures / further research

In the autumn 2003 and spring 2004, I have been asked to give several lectures on the results of my research project, at the Croft Children's Unit and at Brookside Family Consultation Clinic.

As there is very little research in this area, I hope to publish several articles and possibly a book from the results of this PhD thesis.

As I have mentioned previously, I gathered a huge amount of data from the 222 video tapes of music therapy sessions at the Child Development Centre that the music therapist, Emma Carter, analysed in great detail. Although I was able to use this data to answer many of my research questions, if I analysed the video analysis data in more depth, I could look at many other aspects of my work and answer many more questions. The types of questions I might be able to answer are:

- Does a particular child respond more when I initiate an interaction myself or when I copy the playing he or she initiates?
- Is a child reacting or interacting more to the piano, the clarinet or vocalisations?
- Does the amount the child plays or interacts increase or decrease as individual sessions progress?

Next autumn I hope to find some further research funding to have all the research assistant's hand-written video-analysis codes typed onto the computer. With the help of Malcolm Adams (research consultant) I hope then to find or devise a computer

programme to analyse the children, the parents and my behaviours and how these behaviours relate to one another in more detail than I have been able to do so far.

Further research could also be undertaken to compare the way that I distribute my time in music therapy sessions with the way other music therapists distribute their time. It would then be possible to determine whether there were 'typical' ways in which music therapists work and to investigate what patterns of work are related to. They might, for example, be related to the type of training a music therapist had received or to their musical background.

Although I have recently given lectures on the importance of single line instruments in my music therapy work, I would like to write an article on this aspect of the work especially as the CDC investigation showed that I used the clarinet fairly consistently across all the children.

At the Croft I hope to make a training video about my MTDAs and the way short term music therapy fits into the treatment programme. I might also look into how to train other music therapists to use MTDAs in other Child and Family Psychiatric Units. However, further research looking at larger numbers of children would be necessary to firmly establish the MTDA as a reliable assessment tool.

Another area that would be interesting to explore would be to look at applying MTDAs to other client groups, either younger or older children with possible autistic spectrum disorders or children with other possible psychiatric disorders such as Attention Deficit Disorder, Attachment Disorders or Specific Language Disorders. In the present CDC pre-school study, many parents were surprised at how quickly their children had become engaged in the initial music therapy assessment sessions. This would indicate that a non-verbal, but potentially very motivating assessment procedure such as the MTDA could be of value with this age group.

At a later stage, I might consider setting up a long-term research project to look at how we train music therapy students to interact musically with their clients. The present investigation has confirmed the central value of non-verbal musical interactive play in music therapy treatment and I would like to find out more about the best ways to convey these skills to others in music therapy training courses and through music therapy clinical supervision.

6.6: Personal reflections

It has been an incredibly exciting and rewarding experience to be immersed in this research investigation. Although I have been involved in music therapy research investigations in the past, I have never before had the time to devote my working life almost entirely to the process of music therapy research. During the last three years a part of my mind has always been on this project even when I have been doing other things such as cooking, playing chamber music or even eating and sleeping. Occasionally, I have felt overwhelmed and wished that I could put the research completely to one side; but mostly I have felt very motivated and 'driven', longing beyond all else for the next several hours where I could get back to thinking and writing about the 'next bit'. When the writing is finally over, I know that I will suffer 'withdrawal symptoms' and will need time to adapt to no longer having my research project to think about.

I have learnt many things over the past three years. My confidence as a researcher has grown considerably and I now feel that I could supervise other music therapy research projects, and independently set up further investigations of my own. However, I would always go on consulting other specialists and work collaboratively with others as I see this interchange as a fundamental part of any research process. My computer skills have also improved and I have learnt to use Microsoft excel and SPSS.

The results of the outcome investigations have been exciting and have helped me to feel confident in the value of my particular clinical music therapy approaches not only for my own work but also for other music therapists using these ways of working. But I have

also felt pleased with the 'success' of the research methodology itself as this may also be useful to other music therapy researchers.

Investigating my own work has meant that I have had to be careful not to let my research questions interfere with the clinical work I was doing. This was one of the reasons it was invaluable having a research assistant who could be analysing videotapes but not feeding results back to me until I had finished the relevant pieces of clinical work. The huge advantage of looking into my own music therapy work has been that I have remained excited and motivated to continue throughout the project. I don't think I could have been quite so enthusiastic or 'driven' by a research project investigating other music therapists' work.

Nevertheless, there have also been low moments and periods of weariness. In many ways the research process has been like climbing a range of hills: lots of hard walking, many tedious passages, but moments of great elation and excitement when reaching each of the peaks. At the end there is physical exhaustion, a huge sense of achievement and a slight bitter-sweet regret that the adventure has come to an end, even though there might be plans for further hill walking in the future.

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Appendices

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Chapter 6

Chapter 1

Appendix 1.1: Time line

- October 1999: Initial research proposal written in consultation with colleagues in order to apply for the Music Therapy Millennial Research Fellowship.
- November 1999: obtain Research Fellowship
- Spring 2000: submit two outcome investigations to the Cambridge Local Research Ethics Committee.
- July 2000: interview and appoint research assistant to commence in September 2000.
- July 2000: obtain approval from the Ethics Committee for the Child Development Centre investigation.
- September 2000: research fellowship starts. Devising of forms and questionnaires.
- October 2000: first three CDC research investigation children start treatment.
- October 2000: obtain approval from Ethics Committee for the Croft investigation (after having fulfilled some requested amendments).
- November 2000: first research MTDAs at the Croft.
- Spring and Summer 2001: drafting of Chapter 2, while experimental work continues.
- Summer 2001: research assistant starts analysing videos of CDC children who have completed treatment.
- July 2001, Croft recruitment widened to include children from the Asperger Clinic and Children on the summer programme.
- Autumn 2001: Confirmation of Candidature at Anglia Polytechnic University.
- Spring and Summer 2002: drafting of parts of Chapter 3 and Chapter 1.
- July 2002: experimental work at the Croft completed.
- October 2002: experimental work at the Child Development Centre completed.
- November and December 2002: PhD video put together and completed.
- March 2003: video analysis of 222 videos completed.
- Spring and summer 2003: Data from videos collected, analysed and subjected to statistical tests. Chapters 5, 4 and 6 drafted. Whole thesis revised and finalised.
- August 2003: completion.

Appendix 1.2: American Psychiatric Association, Diagnostic Criteria for Autistic Disorder (1994, p.70)

A. A total of six (or more) items from (1), (2), and (3), with at least two from (1), and one each from (2) and (3):

(1) qualitative impairment in social interaction, as manifested by at least two of the following:

(a) marked impairment in the use of multiple nonverbal behaviors such eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
(b) failure to develop peer relationships appropriate to developmental level
(c) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest)
(d) lack of social or emotional reciprocity

(2) qualitative impairments in communication as manifested by at least one of the following:

(a) delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)
(b) in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
(c) stereotyped and repetitive use of language or idiosyncratic language
(d) lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

(3) restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:

(a) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity of focus
(b) apparently inflexible adherence to specific, nonfunctional routines or rituals
(c) stereoptyped and repetitive motor mannerisms (e.g, hand or finger flapping or twisting, or complex whole-body movements)
(d) persistent preoccupation with parts of objects

B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years: (1) social interaction, (2) language as used in social communication, or (3) symbolic or imaginative play.

C. The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder

Appendix 1.3: American Psychiatric Association, Diagnostic Criteria for Asperger's Disorder (1994, p.77)

A. Qualitative impairment in social interaction, as manifested by at least two of following:

(1) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction

(2) failure to develop peer relationships appropriate to developmental level

(3) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by lack of showing, bringing or pointing out objects of interest to other people)

(4) lack of social or emotional reciprocity

B. Restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:

(1) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus

(2) apparently inflexible adherence to specific, nonfunctional routines or rituals

(3) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)

(4) persistent preoccupation with parts of objects

C. The disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning.

D. There is no clinically significant general delay in language (e.g., single words used by age 2 years, communicative phrases used by age 3 years).

E. There is no clinically significant delay in cognitive development or in the development of age appropriate self-help skills, adaptive behavior (other than in social interaction) and curiosity about the environment in childhood.

F. Criteria are not met for another specific Pervasive Development Disorder or Schizophrenia.

Chapter 2

Appendix 2.1: Procedures I followed to carry out the literature review

1 Literature searches

Hilary Jackson, a senior librarian who works for the Anglia Support Partnership in Huntingdon helped me with my literature search. She also helped me to locate a number of articles from journals that I was not able to find elsewhere. This was particularly helpful for a number of American articles.

These were the strategies she used:
Databases searched:

1. COCHRANE LIBRARY – issue 3 2002
2. MEDLINE – 1966 to 2002 June [Ovid technologies]
3. CINAHL - 1982 to 2002 June [Ovid technologies]
4. AMED – 1985 to 2002 June [Ovid technologies]
5. EMBASE – 1980 to 2002 June [Ovid technologies]
6. PSYCHINFO - 1967 to 2002 June [Ovid technologies]

Given that there is only a small inconsistency of subject indexing across each resource, the search strategy used on each database was as follows.

Controlled terms

- autistic disorder or
- autism or
- infantile autism or
- asperger syndrome or
- child development disorders, pervasive

AND

- music or
- music therapy or
- music perception or
- music education

Free text words [* indicates a word stem search, found in any field]

- autis* or
- asperger*

AND

- music* or
- music therap*

The results of all these permutations in each of the databases were then put together and duplicate entries removed.

2 Cross referencing from journals/books

As I had direct access to a wide selection of music therapy books and journals through the Anglia Polytechnic University library, I was able to search through this literature myself. Whenever I found an article or chapter that was relevant to my thesis, I consulted the references and book lists at the end of the article and then tried to locate texts that I felt would be relevant to my research.

3 Unpublished Music Therapy theses in the United Kingdom

While I was writing my PhD thesis, I was also supervising six Music Therapy MA projects at Anglia Polytechnic University. Many of these projects were on topics closely related to my work. This meant that ideas could be exchanged and explored and I was able to refer to these MA projects in my thesis. I also consulted other unpublished MA theses both at Anglia Polytechnic University and at other Music Therapy Training Centres such as the Nordoff Robbins Music Therapy Training Centre.

4 National and international contacts at music therapy conferences

Over the years, I have presented papers at a large number of International Music Therapy Conferences. Because I speak French and German fluently, I have been able to listen to a wide range of speakers and make contact with music therapists from all over the World. This has meant that I have been able to refer to a number of unpublished presentations made at international conferences as well as learn from discussions with speakers. German and Austrian music therapists have made me aware of a wealth of music therapy literature written in German which is generally not referred to by music therapists in the United Kingdom. My friend and colleague, Barbara Griessmeier, has sent me copies of German articles in the 'Musiktherapeutische Umschau' which have been difficult to find here.

At a PhD course at Aalborg University in Denmark, in November 2002, I was able to make contact with a number of other music therapy researchers. Ulla Holck was kind enough to explain aspects of her Danish PhD thesis to me and let me have a copy of her very extensive list of references. This course also made it clear to me where I could find literature on music therapy research methodology, which I have included in Chapter 1.

Chapter 3

Appendix 3.1: Music therapy assessment form (stage 1)

CHILD **Date:**

Attention, awareness, concentration

Motivation

Communication

Spontaneity, imagination, choice

Any other comments

Suggestions

Appendix 3.2: On-going Music Therapy Assessment Form (stage 2)

Appendix 3.3: Music therapy report form (stage 3)

Music Therapy report

Name: **D.O.B:** **Date:**

Introduction

To include: who referred the child or the family, when the referral was made, reason for referral (if given). History of previous music therapy treatment and/or assessments. Summary of when treatment was given, frequency, length, individual or group work.

General musical likes and dislikes

General aims or objectives

Progress towards these aims

Parent's role in sessions (if applicable)

Recommendations

Appendix 3.4: Video script

Script and voice over for PhD video
(length of video: 47 minutes)

Text to appear on screen is included in **bold**.
Voice over, or when Amelia Oldfield (A.O.) talks to the screen is included in *italics*.

After APU logo etc, title:

Musical connections

Then camera on A.O. talking and reading the following:

In this video I aim to demonstrate what I feel are the main characteristics of my music therapy approach with pre-school children with autism and their parents.

To do this I will show you excerpts from music therapy sessions with five pre-school children and their mothers.

Camera switches to stills as A.O says:

Mikey, Jamie, William, Imogen and Emilio.

Then switch to picture of all five stills. A.O. continues:

All of the five children have a diagnosis of autistic spectrum disorder and are two to four years old. They are amongst the 10 subjects investigated in one of the two outcome research projects in my PhD thesis.

Back to A.O.

This video illustrates some of the points I made in Chapter 3 of my PhD thesis and in Chapter 4 I will relate excerpts in this video to explain the process of the video analysis.

Then show still of Mikey with the following title:

Mikey
Aged: 2 years 5 months

Throughout the video, camera will switch from voice-over to A.O. reading or to stills, to avoid talking over important moments in the music therapy sessions.

Start Mikey excerpt 1: clarinet following his movements.

This is my third session with Mikey. I follow him around the room with my clarinet, imitating and reflecting his movements, and attempting to echo his sounds to gain his interest. The music I play consists of free and flowing phrasing with no predictable rhythmical patterns in order to allow for flexibility in our basic exchanges.

Start Mikey excerpt 2: Mikey looking around at my piano glissandi.

Voice-over:

A few weeks later, he is able to take an interest in dramatic piano glissandi, beginning to enjoy some simple interactions with me.

Start Mikey excerpt 3: cabassa rolling.

Voice-over:

A month later Mikey can sit down with me and we roll the cabassa to one another. Again the vocal glissandi that accompanies the rolling of the instrument attracts Mikey's attention and he is also aware of my vocal sounds stopping and starting. For this reason I emphasise the catching of the cabassa by a musical accent, followed by a silence, in order to help Mikey to be aware that the instrument is being exchanged between us.

Start Mikey excerpt 4: bells falling off head.

Voice-over:

Four months since we started our sessions, Mikey will now sit on a chair and share a musical game with me and his mother. I use a familiar children's song in order to give this interaction a predictable shape and form. *(pause)* In my sessions with Mikey I alternate between structured interactions such as this, and allowing Mikey to take the initiative (pause) with me following his movements and sounds, as in this next clip.

Overlap next clip with end of last voice-over: Mikey excerpt 5: horn/clarinet sequence.

Voice-over:

In this last clip, taken five months after we started working together, Mikey is clearly more communicative than he was in the initial, similar interaction you saw in his first video excerpt. (Pause) *His mother times her musical exchanges with her son beautifully allowing him space to respond and look at her.* (Match this with the time he is on Mum's lap and looks around at her, after she waits*). He is now initiating interactions and taking more interest in my music, my clarinet and in me*. (Match this with the time he comes up to my clarinet and touches it*).*

Then still with Jamie plus title:

Jamie
Aged: 3 years 5 months

Start Jamie except 1: Jamie and I leaping about around mat.

Voice-over:

In my second session with Jamie, my following of his movements quickly develops into a combined movement and sound exchange. Sometimes I echo his movement or sound ideas and sometimes he goes along with my ideas. When Jamie runs around the room, I try to echo his excitement through fast singing, but then draw him back to more focused sound exchanges by including glissandi in my singing.

Start Jamie excerpt 2: stick-tapping exchange.

Voice-over:

Later on in this session, Jamie has a special way of playing with the beaters, which I try and develop into a musical dialogue.

Start Jamie excerpt 3: Jamie lying on floor but directing my playing by tapping the floor.

Voice-over:

A week later, Jamie 'controls' my playing through his gestures.

Start Jamie excerpt 4: stick-tapping exchange and percussion/vocalising.

Voice-over:

Three and a half months later, Jamie still enjoys his special beater tapping exchanges. *(Pause)* Our rhythmic communication is now more varied and intricate and Jamie is also vocalising more freely. I try to time my musical responses carefully, and pick up on his suggestions as well as initiating my own. Towards the end of the excerpt I try to give my

responses a melodic shape in order to provide a sense of direction for our musical exchanges.

Then another still plus title:

William
Aged: 3 years 11 months

Start William excerpt 1: cabassa exchange on mat.

Voice-over:

With William, in his second session, I had to listen very intently to the way he was vocalising in order to create a sound and vocal exchange with him.

Start William excerpt 2: both playing the piano together and singing "Hickory…"

Voice-over:

William also recognises and responds to familiar tunes. Here, three months after his sessions started, I improvise around the structure of a familiar song so that we can enjoy and anticipate the changes in the song together.

Start William excerpt 3: woodblock playing on mat.

Voice-over:

A couple of months later, the familiar tunes and structures allow William to vocalise more freely. It is the waiting and the timing of my responses that is so important here.

Then another still plus title:

Imogen
Aged: 3 years 3 months

Start Imogen excerpt 1: Imogen playing piano with me.

Voice-over:

In our first session together, Imogen's playing is easy for me to follow. We quickly connect musically. Her excitement in her playing is apparent and she turns to share her enjoyment with her Mum. *(Match this up with when she turns to Mum).*

Start Imogen excerpt 2: Imogen playing drum and cymbal with me at piano.

Voice-over:

Later in this same session she clearly responds to my musical suggestions, following my rhythmic changes and my breathing.

Start Imogen excerpt 3: Imogen playing horns with Mum; I'm playing clarinet.

Voice-over:

A month later Imogen is able to have some more purposeful dialogues and exchanges with her Mum.

Start Imogen excerpt 4: Imogen, Dolly and Mum playing percussion with me at piano.
Voice-over:

Five months after we started our work together, Imogen plays freely with me, her mother and the doll she has brought with her. (Pause). *She communicates with her mother spontaneously and as I play, I feel they are both at ease, enjoying their shared musical experience.* (Please match up). (Pause). *At the end of the excerpt Imogen, thoughtfully examines her doll, but shows that she is still engaged by moving rhythmically to the music.*

Then another still plus title:

Emilio
Aged: 3 years 8 months

Start Emilio excerpt 1, Emilio playing drum with Mum.

Voice-over:

In Emilio's first session, it is immediately clear that dramatic piano and vocal glissandi will help him to become engaged. I have a playful, humorous approach with him.

Start Emilio excerpt 2: Emilio playing drum with Mum, plus vocal glissandi.

Voice-over:

As Emilio becomes more involved I am able to use the structure of the piano music to sustain his playing rather than having to use dramatic vocal responses.

Start Emilio excerpt 3, Emilio playing drum with Mum, more sustained playing.

Start Emilio excerpt 4: Xylophone playing.

Voice-over:

Further on in this same session, we add movement to our exchanges as well as some playful surprises.

Start Emilio excerpt 5: cabassa exchange on mat with movement and vocal sounds.

Voice-over:

A week later we have a quieter musical dialogue involving movement and singing. (Pause). *Repeated rhythmic units provide a structure to our playing and keep the improvisation going, while free vocalisations allow us to be creative. As often with Emilio, there is a dramatic high point to each musical phrase. This high point corresponds with the moment that our instruments connect with one another.* (Pause). *Emilio's Mum watches in a supportive way, not wishing to interrupt our intense exchange.* (Insert at appropriate moment).

Start Emilio excerpt 6: Clarinet and horn game with Mum.

Voice-over:

As our work has progressed our games have became more elaborate. In our last session together, after six months of music therapy, we all three listen to one another and make suggestions to one another, while continuing to have fun in a creative way. Emilio can now listen to and create longer musical phrases as a way to structure our exchanges. Our interactions are calmer and more focused and he is using language more appropriately. But the humorous nature of our games continues. At the end of our playing we make a clear musical ending together with Emilio saying 'finish'.

Voice-over: A.O. talking:

To sum up, I would like to focus briefly on eight aspects of my work which I feel are very important to my approach with pre-school children with autism and their parents. These are:

As these words are said switch to panel with the following:

- ***Motivation***
- ***Structure***
- ***Balance (****between following / initiating****)***
- ***Basic exchanges***
- ***Control***

- ***Movement***
- ***Playfulness/Drama***
- ***Involving parents***

In the first instance the children are motivated to interact with me in some way because of the music making. (Highlight word 'motivate' and show Imogen excerpt 2 playing excitedly, and Mickey excerpt 5, coming up to clarinet to touch it.)

The structure of the music helps children to know what to expect (show William excerpt 2*). The fact that I can alternate between following the children* (show Mikey excerpt 1) *and providing more structured activities often in specific parts of the room* (Mickey excerpt 4) *helps the children to remain engaged and be more willing to communicate*.

Following the children often means picking up on their special ways of using the instruments, (show Jamie excerpt 2) *and turning their ideas into creative interactions* (show William excerpt 1 as he puts cabassas on top of one another).

Through the music-making even very simple exchanges can be very exciting. (Show Imogen excerpt 3 - beginning).

And the children will often enjoy the control that they can have over adults through musical interactions.. (Show Jamie excerpt 3).

With most of the children I find it is helpful, at times, to follow their movements and then turn these movements into creative exchanges. (Show Emilio excerpt 5 as we're waving cabassas in the air and Jamie excerpt 1*).*

As well as using instruments and moving with the children, it is helpful to be playful and incorporate drama and excitement into the musical interactions. *(Show Emilio excerpt 4, as I run around screen and he then laughs).*

A key aspect of my work is that whenever possible I work very closely with the parents of the children. It is essential that the parents can enjoy the experience of making music with their children, sometimes in a very free way (show Imogen excerpt 4, beginning) *and sometimes in a more structured way* (Emilio excerpt 6, when Mum doesn't appear and he says "u- oh" and he then laughs when she appears). *Sometimes parents can try out new ways of interacting with their children through musical exchanges. In all cases the warmth and affection between the parent and the child needs to be supported and nurtured*. (Show Mikey excerpt 5, on Mum's lap, ending with Mum kissing Mikey).

Appendix 3.5: Three vignettes of music therapy diagnostic assessments

These three vignettes describe the music therapy diagnostic assessments of three children who were included in the outcome study described in Chapter 5. I will try to highlight the role my assessments played in the diagnostic procedure at the Croft Children's Unit. All the names of the children have been changed.

Wayne

Wayne was 10 years old and had a previous diagnosis of ADHD as well as a history of difficulties in social interactions. He attended mainstream school where he was allocated a few hours of LSA support to assist him with his mild learning difficulties. He was admitted to the Croft because there were concerns from professionals and his family that some of his behavioural difficulties represented those on the autistic spectrum.

In his first MTDA session Wayne was quiet, lacked spontaneity and seemed to struggle to have fun. However, he made clear choices of what he wanted to do and told me about past musical experiences when he had played his sister's recorder. He had a strong sense

of rhythm and was able to have improvised musical exchanges with me where he made musical suggestions as well as picking up suggestions that were made to him.

Wayne was much more at ease in the second MTDA session. He made many spontaneous suggestions and initiated musical ideas. He gradually picked up the idea of having 'Kazoo dialogues' with me, changing his vocal intonation and copying and initiating changes of emotion in the vocalisations. Wayne could only make very simple contributions to the improvised musical story, but he did manage to give the story an ending.

In both the MTDA sessions, it was difficult, at times, to understand what Wayne was saying and I was never quite certain whether he had understood what I was saying.

When reviewing Wayne's case during management meetings, the team generally felt that he was autistic. Nevertheless, the changes I had seen in him from one MTDA session to the next indicated to me that, once he was at ease with the situation, he was able to be communicative in non-verbal ways and could even initiate interactions and be quite spontaneous and creative. I suggested to the staff team that his language difficulties might be partly responsible for his social difficulties. In the end we gave him a 'borderline' ASD diagnosis, rather than an autism diagnosis.

Stuart

Stuart was 12 years old with a history of long-term difficulties in both learning and school. He had been excluded from school many times and over the past year it had become extremely difficult to contain his aggressive outbursts at home. He was admitted to the Croft for an overall psychiatric assessment.

Stuart was initially reluctant to come to music therapy sessions possibly because he had had a previous negative experience related to music. After much negotiation and several

missed sessions he finally agreed to come for fifteen minutes but did not want to be videoed.

During his first session he was very anxious. He took on my first suggestion and played the drum and the cymbal very loudly while I accompanied him on the piano. He seemed to enjoy the volume of noise he was generating and briefly allowed himself to enjoy the fact that I was playing loudly with him. In general, however, I felt that he was playing for himself while watching how I would react to his loudness rather than using the playing to communicate with me in any way.

After this, Stuart chose a series of percussion instruments in a somewhat frantic and repetitive way, taking very little notice of my musical responses to his playing. He seemed anxious and concerned about being in control of the session. He became quite agitated and refused to accept my suggestions or conform to the structure of the session which involved taking turns to choose what instruments we should play. After ten minutes in the music room he walked out without warning, went to the toilet and then went back to the schoolroom. Later, I talked to him, telling him that I didn't mind him leaving the session but that it would be helpful to let me know when he wanted to leave so we could end the session together.

A week later, Stuart was much calmer about coming to the session and consented to come without any fuss. He asked me not to sing the hello song so I said "hello" instead and explained that we would again take turns to choose what instruments we would play.

This time, Stuart stayed for fifteen minutes and asked to finish the session, accepting to play the bongos briefly with me to round off the session. Stuart was calmer during the session, and seemed less desperate about being in control. Nevertheless, I still felt that we were playing in "parallel" rather than using the music-making to give and take or communicate in any way.

Stuart was very difficult to manage on the Unit and had to have an individual program because he refused to take part in any activities with the younger children on the Unit. In general, the staff team felt that Stuart had a conduct disorder. However, when I suggested that he might have some deep-seated difficulties communicating which might often be masked by his general anxiety and disruptive behaviours, he was given an ADOS test which revealed that he was borderline autistic spectrum disorder in addition to having a conduct disorder.

Deborah

Deborah was a four year old girl who had been known to the psychiatric service for a year previous to her admission to the Croft. There had been concerns regarding unpredictable, confrontational behaviour both at home and at nursery. She was admitted to the Croft with her mother with a query regarding autistic spectrum disorder or ADHD.

As Deborah was only four years old it was agreed that I should see her with her mother.

Deborah was pleased to come into the room and wanted her Mum to join in with the playing. She had very clear ideas about what she wanted to play but was also able to accept suggestions from myself as well as from her Mum and to conform to the clear structure of the music therapy session. There were times when it felt as though Deborah wanted to be in control and was trying to draw her Mum into conflict. Nevertheless, Deborah responded well to praise and could be distracted from getting stuck in an argument.

Deborah showed a lovely sense of imagination, pretending to drive a bus while playing the ocean drum and encouraging Mum and myself to sing songs on the bus. At other moments she seemed quite immature saying “me do it” in a toddler like way.

Deborah was very motivated to play most of the instruments but had obvious difficulties holding on to two beaters and co-ordinating her movements. At times she was also quite

distractible, often fiddling with a second instrument while still playing the first one. In our musical improvisations, Deborah was communicative and playful and it was possible to take turns and exchange ideas.

In her two MTDA sessions with her mother, I felt that Deborah presented me with a very mixed picture. On the one hand she was social and communicative, showing imaginative and creative play; on the other hand, she seemed to feel a need to be in control and found it hard to relax into communicative exchanges.

On the Unit Deborah clearly struggled in group situations, showing few spontaneous overtures to other children and sometimes needing very clear boundaries not to be aggressive to other children. She was given a diagnoses of PDD (nos) (Pervasive Developmental Disorder of a non-specific type) which I felt reflected what I had seen in my MTDA sessions.

Chapter 4
Appendix 4.1: CDC project Information Sheet

(given to parents before they signed the consent form and before the treatment started.)

Music Therapy for pre-school children on the autistic spectrum Research Project

We are inviting you to take part in our study of pre-school children on the autistic spectrum who are receiving individual music therapy at the Child Development Centre.

We want to follow the progress of your child in the music therapy sessions. To do this we will need to video the sessions. We will then look at the videos to describe what has happened. This will help us to see how your child has developed over the time he or she was in the music therapy sessions.

At the end of each session the music therapist reviews the work with the parent and we would like to record these conversations. This will help us to keep a record of your views on how your child is developing.

Before the music therapy sessions start we will arrange for your child to have an ADOS test, unless your child has already had this assessment. ADOS stands for 'Autistic Diagnostic Observation Schedule' and is always administrated by an experienced and especially trained clinician. Your child will be invited to take part in several playful tasks such as blowing bubbles, stacking blocks, or simple puzzles or games. The test lasts approximately half an hour. Although your child will probably already have had similar assessments, for the research project we need to make sure that all the children have had the same test before starting the music therapy sessions.

Before the sessions begin, and after the twenty-four weekly sessions have finished, we will briefly interview you and ask you questions about how your child is getting on and how you feel music therapy may have helped. These interviews will be audio taped so that we can record your impressions in an accurate way.

This project will not make any difference to the treatment of your child, although it will help us to describe more clearly how he or she responds to music therapy sessions. The main benefit of the study is to help us to learn more about the effects of music therapy and how to improve them.

All the personal information collected in the study will remain confidential to the study team. Reports of the research will not identify individuals. All tapes (video and audio) will be erased after the study is complete.

You are free to make your own decision about taking part in this study. Your decision will not affect the treatment you receive. You may choose to withdraw from the study at

any time without giving a reason. You will be asked to sign a consent form if you agree to participate

If you have any concerns about the study you could consult Dr Verity at the Child Development Centre. (Tel: 01223 216 662).

Further information may be obtained from Amelia Oldfield, Music Therapist at the Child Development Centre.

Amelia Oldfield
Music Therapist

Malcolm Adams
Clinical Psychologist

Appendix 4.2: CDC project Consent Form

Cambridge and Huntingdon Health Authority

Consent by Legal Guardian of a Minor to the participation by themselves and the Minor in a research study.

Music Therapy for pre-school children on the autistic spectrum Research Project

I
(Name)
…….

of
(address)
……..

……..

being the legal guardian of

……

of age ….. (subsequently referred to as child) hereby give my permission fully and freely for the child to participate in this research project. I also fully and freely consent to participate in the project myself.

I understand that the project is designed to improve knowledge about music therapy with young children. I note that I may withdraw my consent at any stage in the investigation and I acknowledge that the purpose and nature of the study have been explained to me by:

……

and that I had an opportunity to discuss these matters with him/her.

I have received a written explanation of these matters.

Signed …….

Date …….

Witnesses to signature of participant/guardian and to the fact that he/she has read the document and freely given his/her consent.

Signed …….

Date ……..

(Witness **must not** be a member of project team)

I confirm that I have explained to the participant/guardian the nature of the study.

Signed ……..

Date ……

(Member of project team)

Place ……..

Appendix 4.3: Cambridge Local Ethics Committee approval letter

Appendix 4.4: Table ap.4.1: Video analysis codes for the ten children

Codes	Explanation of codes	Children for whom codes were used									
E	Engaged	W	J	Mi	I	Ma	E	R	M	H	B
Ex	Engaged with instrument / choosing	W	J	Mi	I	Ma	E	R	M	H	
I	Initiating						E				B
M	Active music making	W	J	Mi	I	Ma	E	R	M	H	B
Mx	Playing with help		J	Mi				R	M	H	
V	Vocalising spontaneously	W	J	Mi	I	Ma	E	R	M	H	B
W	Using words	W			I	Ma					
Ts or Ti	Talks spontaneously						E				B
P or Mo	Moves playfully	W	J	Mi	I	Ma	E	R	M	H	B
S	Sings song	W						R	M		
Sm	Smiles									H	
R	Rejects / resists				I	Ma	E			H	
N	Negative behaviour	W	J	Mi	I	Ma	E	R	M	H	B
C	Crying			Mi							
Ve	Vocalises echolalically										B
Te	Talks echolalically						E				B
T	Goes to toilet										B
Im	Interacts with Mum	W	J	Mi	I		E	R	M	H	B
Id	Interacts with Dad					Ma					B
Ra	Responds to A.(music therapist)					Ma	E				B
Rm	Responds to Mum						E				B
Rd	Responds to Dad					Ma					B
Pc	Physical contact with Mum								M		
Os	Out of shot	W	J	Mi	I	Ma	E	R	M	H	B
B	Blank	W	J	Mi	I	Ma	E	R	M	H	B
Av	A. vocalises	W	J	Mi	I	Ma	E	R	M	H	B
Ao	A. plays 'other' instruments	W	J	Mi	I	Ma	E	R	M	H	B
Ap	A. plays piano	W	J	Mi	I	Ma	E	R	M	H	B
Ac	A. plays clarinet	W	J	Mi	I	Ma	E	R	M	H	B
As	A. sings song	W	J	Mi	I	Ma	E	R	M	H	B
Apl	A. moves playfully	W	J	Mi	I	Ma	E	R	M	H	B
Ae	A. attempts to engage	W	J	Mi	I	Ma	E	R	M	H	B
Af	A. follows	W	J	Mi	I	Ma	E	R	M	H	B
Ab	A. blank or out of shot	W	J	Mi	I	Ma	E	R	M	H	B
Mae or Mi	Mum attempt to engage / initiates	W	J	Mi	I		E	R	M	H	B
Mp	Mum plays	W		Mi	I	Ma	E	R	M	H	B
Ms	Mum sings	W								H	
Mf	Mum follows			Mi	I		E				B
Mt	Mum talks						E				
Mpl	Mum moves playfully				I						

Dae or Di	Dad attempts to engage / initiates					Ma				H	B
Dp	Dad plays					Ma				H	B
Df	Dad follows					Ma					B
Ds	Dad sings									H	
Dt	Dad talks					Ma					
Tb	Total boxes	W	J	Mi	I	Ma	E	R	M	H	B

Appendix 4.5: Examples of video-analysis forms corresponding with excerpts in the PhD video (highlighted squares)

Video Analysis Form
Video Tape Number: 3 Date: 08/03/01
Clients: Mikey and Mum
Session Number: 15

	5	10	15	20	25	30	35	40	45	50	55	60
16 C	E*	E	E	E	E	IM	E	E	E	E	E IM	E
A		C	C /MI	C /MI	C /MF	C /MF	C /MF	C /MI	C /MF	C /MF	C /MF	C /MF
17 C	E		E	E	E	E		E	E		E	E
A	C /MF	C	C /MI	MO	C	/MF	MO	C	/MF	MO/ MI	C	C
18 C	E	E	E	E IM	E	/ E	E	/ M	E	IM	E	M **1**
A	/MI	C	/MI	C	C	C	C	/MI	C	C /MF	/MI	C
19 C	M	M	M	M	M	E		M	M	V		E
A	C		VO		F P	P	P	P P	P	P	P	VO
20 C		E	E	E	E		M	M	M	M		M
A	P	P VO	P VO	VO	VO	VO	P VO	P	P	P		P VO
21 C	M	E	E		M	M	M	M	M	V		
A	P VO		VO	VO	P VO	P VO	P VO	P VO	P VO	VO	P VO	P VO
22 C		IM	IM	IM	IM	IM	/		M	M		V
A	P VO	P VO	P VO	P VO	P VO	P VO	P VO	P VO	P VO	P VO	P VO	P VO
23 C	V	IM	IM V	V	/		/	E	/		E	
A	P VO	P VO	P	P VO	P VO	VO	P VO			AE	AE	AE

* codes explained in previous table Ap.4.1 **1** = autoharp
Row C refers to child's codes
Row A refers to Amelia's (top line) or parent's codes (bottom line)

Appendix 4.5: Examples of video-analysis forms corresponding with excerpts in the PhD video (highlighted squares) (continued)

Video Analysis Form
Video Tape Number: 16 Date: 06/09/03
Clients: Emilio and Mum
Session Number: 1

Very reluctant to enter room, screams…

	5	10	15	20	25	30	35	40	45	50	55	60
0 C	R*	R	R	R	R	R	R		/	R	/	R
A	VO	VO	VO	VO	VO		V /AE	V	/AE	V /AE	V /AE	V
1 C	R	R	R	R	R	E	R	R	R	E	E	R
A	V	VO	/AE	VO	VO/ AE	VO	VO	O	V /MP	VO/ MP	V /MP	
2 C	E			R	R	IM	R TI	TI	E	/	R	R
A	VO	VO	VO	AE	V /AE	AE	AE	/AE	V	V	O **1**	AE
3 C	/	E	M **1**	E	R	E	E	IM	R	M	IM	M
A	O	/MP	P	P/ MP AE	/AE	P	P	P /MP	PV	P/ AE	P	P /AE
4 C	/	M	E R	E	I		R	R	M	RA	R	
A	P	Ps	P /AE	VP	P /AE		P /MP	P /MP	PV	P	P /MP	P
5 C	M		IM		IM	IM	IM	IM	IM	IM	E	E
A	P	P	P /MP	P /AE	P /AE	PV /AE	/AE	PV /AE	PV /AE	PV /AE	PV /AE	PV /AE
6 C	E	RM	RM	M	RM	RM	RM	RM	RM	RM	IM	RM
A	PV /AE	P /AE	P /AE	P	P /AE	P /AE	P /AE	P /AE	P /AE	P /AE	P	P /AE
7 C	M	RM	IM		RM	RM	IM	E	E	M	M	M
A	P	P	P	P	P	P	P				P	P

		/AE	/AE		/AE	/AE		/AE				

* codes explained in previous table Ap.4.1 **1** = drum

Row C refers to child's codes

Row A refers to Amelia's (top line) or parent's codes (bottom line)

Appendix 4.6: Forms used to record the codes on the video-analysis

forms

Counting form: B, session 1

Session 1	B's codes														
Minute	e	ex	M	Im	v	p	ra	rm	ts	Te	Ve	t	i	os	B
0	9		3		1		2								1
1		11	11				2				3				1
2	1		9				4								2
3	2		5	1			4		2		2				3
4	2		6						1				1		2
5			12				5								
6			12		3		6				1				
7			12	1			5		1				1		
8			12		1		4								
9			10		1		9		3		1				
10	2		9				4		1						1
11			9				7								3
12	1		6	1			1	4	1					2	2
13	1		9			4	9								
14			11			5	10				2				
15			12				8								
16	4	2	2				1			1					3
17	2		10		2		3								
18	2		7				1								2
19	2		6				1			4					1
20	3		5				2			1	3				3
21	1		2		1		1		1		1				
Tot	32	2	180	3	9	9	89	4	10	6	13		2	2	24

Appendix 4.7: CDC project Semi-Structured Interview for parents

Music Therapy with Pre-school Autistic Children

Structured Interview for Parents

Initial structured interview, before treatment starts. (There will be another structured interview when the music therapy treatment has finished).

General Information

This structured interview will usually be used after the parent and the child have had their ADOS and after the parent has received the Information Sheet about the research and signed the Consent Form. The person administering the structured interview will watch the ADOS from behind a screen and the parent will be informed of this.
The purpose of the interview will be explained to the parent.
It will be explained to the parent that the information gathered from this structured interview and the structured interview at the end of the treatment will not be disclosed to the music therapist until the treatment has finished.

Transition questions leading to questions regarding parent's perception of their child.

These questions aim to determine how the parent perceives their child, such as:
positive/negative views of child; acceptance or non-acceptance of child's difficulties;
realistic/unrealistic view of what their child can/cannot do.

Suggested questions:

- That was fun watching X in there. Were you surprised by

what he/she did?
- Did he/she respond in his/her usual way?
- Do you find yourself wishing he/she would do more or do things differently?
- It must be great seeing X progressing?
- Is it hard seeing X struggling?
- What would you say are your child's greatest strengths?
- What are his/her difficulties?
- Have you always known that X was having difficulties?
- Did it come as a shock when you were first told your child was autistic?

Questions about Music Therapy

These questions aim to determine what the parents think about music therapy, what they hope music therapy will achieve for their child, what they feel their child will get out of the sessions, what they hope to get out of the sessions themselves.

Suggested questions:

- Where did you first hear about music therapy?
- Why do you think X will benefit?
- What do you hope X will get out of the sessions?
- Are there any particular areas you would like to see your child making progress with,
  for example, concentration, language development, turn taking, a chance to have fun,
  accepting adult direction...?
- What did you think of the first two assessment sessions?
- Do you think you will get anything out of the sessions for yourself?
- Do you enjoy music? ...listening / playing an instrument?

Music Therapy with Pre-school Autistic Children

Structured Interview for Parents

(scoring sheet)

Transition questions leading to questions regarding parent's perception of her child.

Underline or circle appropriate section.

- Parent has positive view about child / mixed view / negative view.
- Parent accepts difficulties / partially accepts difficulties / doesn't accept difficulties.
- Parent has realistic view of child's strengths and weaknesses / mixed view / unrealistic view.
- Parent is very anxious about child / anxious / concerned but not anxious.
- Parent unable to communicate with child / can communicate sometimes / is happy with the way he/she relates to their child.

General comments:

Questions about Music Therapy

Underline or circle appropriate section:
Parent's view of what might be achieved in music therapy was: realistic / mixed / unrealistic.

List parent's expectations for child:
for example:
increase concentration
enjoyment
increase vocalisation
increase acceptance of adult direction

List expectations for parent for him or herself:
for example:
pleasure in watching child having fun
feeling closer to child
enjoying music

General comments:

Appendix 4.8: The children's music therapy reports

Appendix 4.8.1: W's music therapy report.

Name: W **D.O.B**.: **Date**: 5.6.2001

W was referred to music therapy by his pre-School Specialist Support Teacher at the Child Development Centre. He was seen for two half-hour music therapy assessment sessions with his mother in June 2000, and had regular, weekly, individual music therapy sessions at the Child Development Centre between October 2000 and May 2001. His mother joined him on a fortnightly basis when she wasn't helping her younger son in a group he was attending simultaneously at the Child Development Centre every two weeks. On the weeks when his mother wasn't available, W came to the music therapy sessions on his own.

General musical likes and dislikes

W was usually fairly amenable to any suggestions I would make and it was sometimes difficult to know which instrument or activity would particularly appeal to him. Nevertheless, he nearly always enjoyed tapping the guitar and would often spontaneously go to the piano. He had a strong sense of rhythm and phrasing and would easily pick up on changes of speed or style. He enjoyed rhythmic tapping exchanges and was able to initiate his own rhythmic ideas as well as copy my suggestions. He would often listen intently and take time to respond, but if I waited long enough it was clear that he had heard my musical suggestion. This was particularly the case when we were having vocal dialogues when there would often be long gaps of silence between our exchanges.

W showed that he recognised a range of familiar songs, and would sometimes sing snippets from these songs, occasionally using one or two words, and usually singing at the correct pitch. He would react excitedly when songs got faster. On several occasions he enjoyed moving around the room with me, stamping his feet and waving his arms, to accompany our sound exchanges.

Aims in the music therapy sessions

- To help W to be communicative and interactive in his play, imitating, turn-taking and exchanging.
- To provide an opportunity for W to enjoy vocalising and using words.
- To increase W's tolerance of my suggestions and to help him to enjoy my ideas as well as his own.

Progress towards these aims

As sessions progressed W allowed himself to have more fun with me. In most sessions, it would usually take me about ten minutes or more to 'stumble' on a shared activity with W where we would eventually have intense and deliberate exchanges. The activity would vary from week to week and would depend on his mood and his energy level. To start

with I would have to pick up on sounds that he was making spontaneously and then, if I was able to give him enough time and leave many moments of silence, he would pick up on my ideas and initiate more of his own.

In the last few sessions he used quite a few words in these exchanges. He seemed to be experimenting with the sound of the words rather than using them meaningfully, as the words he used were not necessarily relevant to what we were doing at the time. These included words in the songs: 'Twinkle Twinkle' and 'The Grand Old Duke of York' as well as individual words such as 'Mum', 'pussy cat' and 'yes'. At other times he has used phrases such as : 'bye bye', 'put it back' and 'finish off' in context, sometimes repeating what I had just said, but at other times with no prompts from me. He has also gradually been more free in his vocalisations, using loud and soft sounds and experimenting with consonants as well as vowels. On one occasion he spent a large part of the session moving around the room singing the sounds: 'sississi'. It is also noticeable that he now seems to want to have vocal conversations *with me* and will be happy to sit on the mat with me with a percussion instrument, exchanging sounds and vocal sounds for up to five minutes at a time.

W was usually quite placid, allowing me to suggest instruments for him to play. However, it would sometimes be difficult to encourage W to take an interest in playing the instruments and he would usually only become involved if I initially imitated an aspect of something that he was doing. At the beginning of our work together, W was often quite mischievous, sometimes throwing beaters or deliberately putting the beaters in his mouth. As we began to enjoy communicating more through our playing, he seemed to stop trying to draw me into conflict.

W responded well to the predictable structure of the session and would accept sitting down on a chair at the beginning and end of each session and consent to sitting on the mat with me with an instrument he had chosen. Occasionally, for no apparent reason, W would be quite sad and tearful and try to leave the room. Mostly, I would be able to divert him and engage him in playing, but on one occasion, in his very last session with me, he remained inconsolable.

Overall, W made good progress in music therapy sessions. His non-verbal exchanges with me became longer, more communicative and more intense and W seemed more motivated to want to communicate with me as sessions progressed.

W's mother's role in the sessions

W's mother enjoyed being in W's music therapy sessions, although it was a little frustrating for her only to be able to do this on a fortnightly basis. W seemed to manage having her there every other week although at times he clearly missed her. He would often look at her or spontaneously give her a hug. As W's way of communicating through

music making is so intense and deliberate, it was not easy to set up three way exchanges between the three of us. Nevertheless we did manage to have some successful clarinet and two reed horn 'trios', as well as some lovely three way clapping and singing games. I felt that W's mother would have liked to play the instruments more herself. She obviously enjoys singing action songs with W and was pleased when he started allowing her to sing to him as well as play some of the other musical games with her at home.

Recommendations

W has responded well in his music therapy sessions and has become more communicative. I would recommend that he should continue with weekly music therapy sessions. It would be best if these sessions could be provided within his school environment as it would then be easier for progress achieved in music therapy sessions to generalise to the classroom situation. He may soon be ready for small group music therapy sessions with two or three other children.

Appendix 4.8.2: J's music therapy report.

Name: J **D.O.B**.: **Date**: 1.5.2001

J was referred to music therapy by the consultant community paediatrician, from the Child Development Centre, in March 2000.

He was originally seen for two music therapy assessment sessions with his mother in July 2000. From October 2000 to May 2001, he had weekly, half-hour, individual music therapy sessions with his mother at the Child Development Centre.

General musical likes and dislikes

J was a very active and energetic little boy who quickly showed an interest in a variety of sounds and most of the musical instruments. He particularly loved tapping the beaters together and would happily have rhythmic tapping exchanges with me. He also liked moving, dancing and jumping around the room, often accompanying his movements by excited vocalisations. He would enjoy 'peek a boo' type games with me while he was moving around and would notice my imitation of his movements as well as picking up and copying some of my movement ideas. Occasionally, he would get distracted by twirling the cymbal or by taking the notes off the glockenspiel but generally it was possible to re-interest him in shared music-making with me. As the sessions progressed he showed awareness and sensitivity not only to phrase endings but also to changes of tempo and musical style. He would react excitedly when the music became louder and faster, or when there was an expectant silence. He quickly responded to the predictable structure of the sessions and clearly expected the familiar 'Hello' and 'Good bye' activities.

General aims during the music therapy sessions

- To intensify our non verbal exchanges, helping J to take turns with me and also pick up some of my ideas or suggestions.
- To increase J's eye contact and to encourage J to vocalise freely and communicatively.
- To help J to accept and enjoy direction
- To increase J's concentration and extend the amount of time he is willing to co-operate with us.

Progress towards these aims

As the weeks went by, J's non-verbal musical exchanges with me became longer, more varied and more sophisticated. He enjoyed my imitation of his ideas but was also able to pick up and take on my suggestions.

His eye contact was good and his vocalisations increased. He used a wide range of vowels with varying pitches and intonation, usually to accompany a movement he was making but also when pointing at an instrument he wanted or when filling in gaps in familiar songs. After a couple of months, he would reliably say 'ei ei' for 'Bye bye' when we played the bongo drums to finish off the session.

Although we communicated best when I entered into the games that he initiated, he was also able to become involved in musical activities that I suggested. It took me several months to show him how to blow down the wind instruments to produce a sound. For many weeks I would play the clarinet and hand him a wind instrument which he would rather reluctantly take from me and quickly put down after one or two unsuccessful attempts. However, he let me persuade him to have one or two tries every week. Eventually he did manage to produce a sound and very much enjoyed blowing down the recorder from then onwards. In the last few sessions he had great fun with an activity where his mother and I pretended to be asleep and he would then 'wake us up' with great bursts of delighted laughter. Even when he was reluctant to become involved in playing an instrument that I offered to him he would consent to try it once or twice before firmly putting it back on the shelf with the other instruments.

J usually made it very clear to us what he wanted to play and when he wanted to finish whatever he was doing. At times he could remain focused on a particular activity for five minutes, but often he would bring games to a close after one or two minutes. Once he had decided that he had had enough it was very difficult to re-engage him in that particular game again.

Overall, I feel that J made very good progress in his music therapy sessions. As his vocalisations increased he started using some words. His concentration improved and he became more willing to take up other people's ideas or suggestions. Above all, he showed how very much he can enjoy communicating with us through playful sound exchanges. He had an infectious sense of fun, which he wanted to share with both myself and his mother.

J's mother's role in the sessions

In general, J's mother observed him quietly, providing gentle support and encouragement at just the right moments. J frequently went to his mum for a reassuring hug, often looking to check that she was still there. At times, she played instruments with us and in later weeks J made a point of giving her instruments to join in with and going to get her, so she played with the two of us. He also became used to sitting on her lap to play the piano and always went to get her when he felt it was time for the three of us to sit at the piano.

Recommendations

J is clearly very responsive to music and sounds and can become very engaged and communicative in music therapy sessions. I would strongly recommend that he continues to have regular, weekly, music therapy sessions. These sessions should ideally be provided at his school so that progress achieved in music therapy sessions can more easily generalise to the classroom situation. He may soon be ready for a small music therapy group with two or three other children.

Appendix 4.8.3: Mi's music therapy report.

Name: Mi **D.O.B**.: **Date**: 3.6.2001

Mi was referred to music therapy by the community paediatrician. He was seen at the Child Development Centre for two music therapy assessment sessions with his mother in June 2000, and then had regular weekly, individual music therapy sessions with his mother between October 2000 and May 2001.

General musical likes and dislikes

Although Mi was quite a solitary little boy who often appeared in a world of his own, he consistently showed awareness of music and sounds. He noticed ends of phrases or changes in volume or musical style by looking up or turning around. He often looked up in an expectant way when his vocal sounds or rhythmic stamping were imitated and he would smile happily when an expected event (such as bells falling off our heads) occurred in a familiar song. He clearly recognised some songs and associated certain instruments with expected events (for example, he quickly realised that the bongo drums were always used as a way of finishing off the session). He was willing to try a variety of musical instruments and particularly liked the ocean drum, the cabassa, the wind chimes, the autoharp, the clarinet and the horn, and latterly the piano and the snare drum. He did not usually use beaters to play the percussion instruments but would occasionally briefly try one tap with a beater before discarding it in favour of his hands. Sometimes he would be interested in feeling the vibrations of an instrument with his hands, his head or his mouth. Having a scarf or a handkerchief around his neck seemed to help divert him from mouthing the instruments, allowing him to use his hands more freely.

General aims or objectives

- To increase the amount of time Mi was willing to be involved in any one activity with me.
- To increase and intensify any communicative efforts by Mi, (for example: eye-contact, imitation or turn taking).
- To increase Mi's vocalisations and give him a chance to express himself through vocal sounds or other forms of music making.

Progress towards these aims

Although Mi was understandably uneasy at first, he quickly became used to the familiar structure of the sessions and responded very well to the 'on/off' approach which consisted of alternating between me following whatever he was doing and then being a little more directive and guiding him towards a choice of my own. The predictable structure of the session seemed to reassure him and after a few tears in the first few sessions, he was always happy to come into the room. Nevertheless, after 25 minutes to half an hour he would invariably show that he was aware that it was time to bring the session to a close.

Mi usually found it difficult to remain focused on any one activity with me for more than one or two minutes at a time. However, as sessions progressed his ability to concentrate

and continue to enjoy a particular instrument with me increased. In the very last session he remained fascinated in playing the snare drum with me for almost five minutes.

The 'safe' predictable structure of the music therapy sessions as well as Mi's obvious interest in sound and music seemed to help him to trust me. In every session, Mi would respond with expectant smiles and clear eye contact to favorite activities such as 'Bells Falling off our Heads' to the tune of 'London Bridge is Falling Down' and 'the Jumping Game' where I would play loud chords on the piano while Mi's mum would help him to jump up in the air.

As sessions progressed, he would 'expect' musical responses from both myself and his mother on the clarinet and the horn and sometimes enter into foot stamping exchanges all over the room with me. He also gradually made his intentions clearer to both of us, sometimes pointing or guiding his mother's or my hands to whatever he wanted to play.

Mi's vocalisations would vary from session to session but he did seem to gradually become more vocal, using a wide range of sounds in the first two weeks of May 2001, but then being quieter again in the last two sessions at the end of that same month.

Overall, Mi seemed to make progress in all areas.

Mi's mother's role in these sessions

Mi's mother was always quietly supportive and helpful, showing great understanding and insight into her son's strengths and difficulties. As sessions progressed, she gradually became more involved in playing the instruments herself, as Mi made it clear to both of us that this was what he wanted. He would often look up at her expectantly and she would respond in a sensitive way, waiting for him to look at her before giving her musical answer. At other times he would seek reassurance from her by giving her a cuddle or take her hand to guide her towards an instrument he wanted. The bond between the two of them was obviously very strong and warm. Mi's mother was pleased about his progress in music therapy and willing to help in whatever way she could.

Recommendations

Mi seems to be particularly responsive to music therapy and I would recommend that he should continue to have weekly, individual music therapy sessions. Ideally, it would be best if these music therapy sessions could be provided within the school that Mi attends as it would then be easier to make sure that progress achieved in music therapy sessions generalised to the classroom situation.

Appendix 4.8.4: 'I's music therapy report.

Name: 'I' **D.O.B**.: **Date**: 28.9.2001

'I' was referred to music therapy by her Pre-School Specialist Support Teacher, in July 2000.

She was originally seen for two music therapy assessment sessions with her mother in September 2000. From January 2001 to July 2001, she had weekly, half-hour, individual music therapy sessions with her mother at the Child Development Centre.

General musical likes and dislikes

'I' had a strong sense of rhythm and could easily be drawn into musical improvisations where there is a strong, fast pulse. She joined in energetically on the drum or the piano and her whole body moved with the rhythm. She could respond to rhythmic changes and would follow me if I got faster or slower. Occasionally she also became engaged in quieter and more gentle types of musical exchanges. She seemed aware of musical phrases and recognised familiar tunes. She did not seem particularly interested in singing songs herself.

General aims or objectives

- To help 'I' to focus and concentrate on any one activity for longer at a time.
- To help 'I' to accept suggestions and directions from adults and to discourage I from drawing us into conflicts.
- To encourage 'I' to communicate with us spontaneously, giving and taking ideas, taking turns, and generally enjoying the process of playing with other people.
- To encourage 'I' to use more spontaneous vocalisations and words

Progress towards these aims

As sessions progressed 'I' has been able to remain involved and engaged for longer periods of time. Although it was difficult to show 'I' how to do things were able to help her to 'discover' how to use the percussion instruments and the piano in a variety of ways and her interest in playing the instruments increased.

'I' still often resented being asked to do things by adults. However, her mother and I found that she could be distracted from drawing us into conflicts if we compromised slightly and remained very calm and unemotional. We also found that I would usually comply if we waited for long enough and if we made sure the request did not feel like a 'battle'. She was reassured by the familiar structure of the music therapy sessions and this sometimes helped her to comply.

I'' could pick up on our musical ideas and suggestions and seemed to enjoy the fact that we were using her ideas to develop musical games. Towards the middle of her treatment for example, she developed a game where she would stand on top of a low table and sing "EE-OO" in a loud voice, expecting me to echo her singing on the piano before jumping off the table. A little later she started pretending one of the woodblocks was a drink with

a straw and was delighted when her mother and I both entered into the game by making drinking noises. Eventually she included us both by offering us both drinks from her 'cup'. 'I' also enjoyed 'waking us up' with the xylophone when we pretended to go to sleep. In another game that evolved we all three raced across the room with bells after saying "ready steady …..go" in a dramatic way.

In all these games, 'I' loved directing us but was also able to accept and enjoy our suggestions.

I's mother's role in these sessions

'I' always seemed very close to her mum, showing her new instruments and spontaneously including her in most of our musical games. At times she would seek physical reassurance through sitting on her mothers lap and it felt as though there was a strong warm bond between the two of them. Her mother was very good at not allowing I to draw her into conflicts and also gradually helped 'I' to conform to the structure of the session particularly at the beginning and at the end. 'I' was delighted when her mum joined in by pretending to go to sleep or by running all over the room with the bells.

Recommendations

I has made progress in most areas during her music therapy sessions. She has become more communicative and playful and is now using more words as well as pretend play. She may well now be ready to enjoy being part of a music group with other children.

Appendix 4.8.5: Ma's music therapy report.

Name: Ma **D.O.B.**: **Date**: 17.4.2002

Ma was referred to music therapy by his Pre-school Specialist Support Teacher. He had two assessment sessions with his mum and dad in February 2001 and then started regular weekly music therapy sessions with his father in June 2002. These sessions continued until February 2002, with a few interruptions due to school holidays and journeys to Bangladesh.

General musical likes and dislikes

Ma loved playing all the musical instruments he was offered, but particularly liked the piano which he would choose to play in every session. He was able to remain focused on playing the piano or the drum for long periods of time. At times I felt he was a little lost in his own playing but I could usually make him aware of my responses to his musical suggestions by introducing sudden tempo or dynamic changes.

Ma had a strong sense of rhythm and phrasing and recognised a number of tunes such as "The Wheels on the Bus" and "Twinkle Twinkle". He liked blowing the reed horn and could take turns with me when I answered his notes with phrases on the clarinet. He could also be helped to take turns with beaters on the autoharp or the bass xylophone.

Ma was very aware of his father in the sessions and would often draw him into his playing by looking up expectantly at him, or offering him a beater or a reed horn to play.

General aims during the music therapy sessions

- To encourage Ma to communicate with me during his playing, by responding to my musical suggestions as well as showing awareness that I was picking up on his musical ideas.
- To encourage Ma to take turns, use eye contact and include myself and his father in his playing.
- To provide an opportunity for Ma to have fun and be spontaneous.
- To extend Ma's vocalisations and encourage him to use vocalisations and words in the form of dialogues and sound exchanges.
- To help Ma's father to listen to Ma and allow himself to be led by his son.

Progress towards these aims

Ma was very spontaneous in his playing, clearly liked making musical sounds and could remain focused on his playing for long periods of time. Over the two terms that I saw him he became much more aware of my playing as well as his own and generally appeared more communicative and less isolated.

Gradually he began to anticipate musical responses and looked up expectantly at the ends of phrases. He could be drawn into the rhythm of a song I was singing, following changes of rhythm and dynamics as well as ending the song with me. The very clear structure to the session seemed to contribute to help Ma give his own initially aimless playing a shape. In later sessions, if given enough time, he would usually bring his own playing to a close and look up at us when he had finished.

As well as exchanging musical ideas in our free improvisations, Ma was also able to take turns to play, letting me or his father encourage him to pass a beater or a horn back and forth. This was usually mainly guided by the adult but sometimes Ma would offer the instrument to the adult spontaneously.

At times, Ma showed a great sense of fun, enjoying peek-a-boo type games behind the screen and becoming involved in moving around the room with me while we played the clarinet and the horn together. He would sometimes laugh and shout with excitement and run after me enthusiastically.

The amount Ma vocalised in sessions varied from week to week, but Ma did seem to enjoy exchanging vocal sounds more with the adults as sessions progressed. He also used more and more words, usually repeating words or producing them at his father's request, but also sometimes spontaneously imitating sounds such as whispers or tongue clicks. On several occasions he sung words in songs such as "Ba Ba Black Sheep" and he would often imitate phrases such as "bye guitar" or "one two three finish" under his breath.

Ma's father's role in these sessions

Ma's father was obviously devoted to his son and very committed to encouraging him to learn. During music therapy sessions, he would often play the instruments himself and at times needed support not to help or encourage Ma too much. As sessions progressed he was sometimes able to listen to Ma and particularly enjoyed turn-taking, and moving with him while playing the horns.

Recommendations

Ma is very motivated by most forms of music making. He has made significant progress in his spontaneous communication during his two terms of music therapy. I think he would benefit from continuing with either individual or group music therapy sessions, which I hope he may have access to at the school he is going to.

Appendix 4.8.6: E's music therapy report.

Name: E **D.O.B**.: **Date**: 30.4.2002

E was referred to music therapy by the speech and language therapist at the Child Development Centre in June 2000.

He was originally seen for two music therapy assessment sessions with his mother in December 2000. From September 2001 to March 2002, he had weekly, half-hour individual music therapy sessions with his mother at the Child Development Centre.

General musical likes and dislikes

E enjoyed playing most of the musical instruments, but above all he liked to use the instruments to play games with the adults. He particularly enjoyed making up rules for the adults to follow and loved including dramatic movements and making use of sudden rhythmic and dynamic changes. He chose some instruments such as the drums, the cymbal, the ocean drum and the reed horns most weeks but gradually also let us encourage him to use the piano, the kazoos and the snare drum.

E loved watching the effects his playing had on the adults. He was sometimes so engrossed in making sure that the rules he had in mind were followed that he found it quite difficult to listen to or hear any suggestions made to him by the adults. As sessions progressed, however he became more able to relax and listen so that he was able to follow changes of rhythm as well as recognise a number of children's songs such as "Row, Row Your Boat" or "Twinkle, Twinkle".

General aims or objectives

- To help E to allow himself to become involved in musical exchanges, where he can accept suggestions as well as share his own ideas.
- To help E to accept direction from adults.
- To provide an opportunity for E to play freely and spontaneously with both his mother and myself.
- To encourage E to talk spontaneously rather than repeating phrases or words that he hears.

Progress towards these aims:

Initially E was very eager to take part in music-making and was delighted when we reacted dramatically to his playing through vocal glissandi noises or running to hide behind a screen. However, he was very clear and sometimes rigid about how we should play and was not always willing to accept our suggestions.

After three sessions, he became quite 'floppy' and for the next four sessions was often quite negative, refusing to play any instruments that were offered. However, he seemed to enjoy my quiet piano playing and could be drawn into playing the ocean drum in gentle ways. We also tried to talk to him and pick up on any positive contributions he made, while keeping the same structure to the session.

This 'rebellious' phase ended after four weeks, when he again started allowing himself to enjoy interacting with us through the playing. Gradually, he became more able to accept suggestions we made and less stuck in wanting an immediate response to his playing. He would often initially use the structure of a game to build up his confidence in his playing. As he relaxed, it was then usually possible to slightly bend the rules and encourage E to be more free and spontaneous in his playing. He would often reject a new instrument or idea when it was first presented to him, but then be willing to try it out on the next occasion.

As sessions progressed, E was also able to accept directions more from both his mother and myself. He seemed to be talking more freely and spontaneously. He loved directing and conducting us but also started to allow us to direct him. E had a great sense of fun and would throw himself into some of our musical exchanges with great enthusiasm and drama, making it a very exciting and enjoyable experience for all of us. He could be equally dramatic and emphatic about not wanting to do something, but in later sessions, it was usually possible to arrive at a compromise rather than being stuck in confrontations.

E's mother's role in the sessions

E's mother was always willing to interact with E and enter into his dramatic games and exchanges. She was also able to be quietly supportive while he played instruments with me. She was pleased with the progress he made during the sessions.

Recommendations

E has enjoyed music therapy sessions and made good progress. I know he has also been enjoying music groups he has been attending at his Nursery. I think he would continue to enjoy and benefit from other opportunities to make music and be creative.

Appendix 4.8.7: R's music therapy report.

Name: R **D.O.B**.: **Date**: 20.3.2002

R was referred to music therapy by the speech and language therapist at the Child Development Centre in September 2000.

He was originally seen for two music therapy assessment sessions with his mother in November 2000. From June 2001 to February 2002, he had weekly, half-hour, and individual music therapy sessions with his mother at the Child Development Centre.

General musical likes and dislikes

R clearly recognised tunes such "Twinkle, Twinkle…" and "The Wheels on the Bus" and would listen intently to familiar musical structures, anticipating and reacting to ends of phrases. He seemed to have a good ear for pitch, as he would sometimes sing ends of phrases at the right pitch and on a couple of occasions clearly searched for the 'correct' note when playing the reed horns. He also showed a strong sense of rhythm as he would follow rhythms of familiar tunes, and speed up or slow down when I changed the pulse.

R enjoyed wandering around the room trying out various percussion instruments. If left to his own devices he often flitted from one thing to another, but with a little encouragement, he could become absorbed in guitar playing, autoharp playing (usually with a beater) and ocean drum playing, for quite long periods of time.

General aims or objectives

- To increase the amount of time R could remain engaged with me in any one activity.
- To increase R's interest in communicating with me, focussing on interactive exchanges and eye contact.
- To help R to accept direction from me and allow me to make suggestions.
- To support R's mother in her efforts to interact with R.

Progress towards these aims

Initially, R had to be encouraged to conform to the structure of the session, which started with a 'hello' song on the guitar and ended with a 'goodbye' activity on the bongo drums. For both these activities we encouraged R to sit down opposite me. During the rest of the session R would roam freely and I would respond, accompanying his musical explorations whenever I could. Gradually R became aware of my answers to his playing and short dialogues developed. R would also let me suggest various activities to him such as ocean drum or autoharp playing, and he would sit with me on the floor on a mat while we played together.

As R became used to the structure of the sessions, he concentrated for longer periods of time and accepted more suggestions and directions from me. He also became more communicative, responding to my musical suggestions as well as enjoying my responses to his contributions.

R enjoyed moving around the room with me. Sometimes we would play 'peek a boo' games behind a screen and sometimes we would use a hoop and we would sing variations of 'Row, Row…' while moving in and out of the hoop. I always had to follow R's movements and moods but he could also accept and pick up on some of my suggestions.

As sessions progressed R, became more willing to try new instruments and he gradually mastered the reed horns, which he played while I played the clarinet. On one occasion, he experimented with various pitches, until he found the tonic note of the piece I was playing. He also played the piano more, allowing himself to relax and experiment as he became more confident.

R enjoyed vocalising and at times he reacted with pleasure when I 'answered' his vocalisations musically. During his last few sessions he very clearly 'completed' songs vocally when a space was left at the end of a phrase. At times his sounds were quite word-like and he seemed on the verge of using words and short phrases.

R's mother's role in the sessions

R enjoyed having his mum in the room and would often look at her or go to her for reassurance. As he became more communicative he occasionally offered her instruments to play and liked to engage her in brief dialogues.

R's mother was always very supportive and helpful and enjoyed seeing R interacting with another person. She was available when R wanted to include her in any way but was also able to sit back and allow him to be independent. She gained great delight from watching his progress and was particularly good at focusing on positive rather than negative sides of his behaviour.

Recommendations

R has made considerable progress during music therapy sessions and clearly enjoyed the predictable structure of these child-centred sessions. I would strongly recommend that he continues to have either individual or group music therapy sessions within his special school.

Appendix 4.8.8: M's music therapy report.

Name: M **D.O.B**.: **Date**: 25.9.2002

M was referred to music therapy by the clinical psychologist at the child development centre, in July 2001.

He was originally seen for two individual music therapy assessment sessions with his mother in November 2001. He then had weekly individual music therapy sessions with his mother between January 2002 and July 2002.

General musical likes and dislikes

M obviously loved music. He had a good sense of pitch and rhythm. He sang in tune and intuitively matched changes of key or rhythm, showing a good ear for phrasing. When in the right frame of mind, M could be 'captured' and very easily engaged by songs he liked, musical rhythms, or melodic phrases. He enjoyed playing all the percussion instruments, the guitar and the piano, and also played the reed horn. When M played the instruments with me he was always intensely engaged in his playing and very sensitive in the way he listened to my improvised musical responses. Although M found it difficult to remain involved in any one activity for very long, his responses were so musical that it was an exciting and rewarding experience to be playing with him.

General aims and objectives

- To increase the length of time M would be engaged in playing with me.
- To help M to 'give and take' and allow himself to enjoy these musical exchanges.
- To help M to accept suggestions and compromise.
- To give M a chance to express excitement and enthusiasm, without this excitement becoming too wild and upsetting for him.

Progress towards these aims

Right from the very first sessions M would be intensely involved in playing the guitar and the percussion instruments with me for ten to fifteen minutes. He would then suddenly decide it was time to finish the session and it would be hard work enticing him to play other things or to be engaged with me in any way.

When playing the percussion instruments he would usually play for a few minutes and then run around the room energetically, before returning to the instruments again. It was almost as though the playing was so exciting that he needed to let off steam every now and again in order to return to the playing again. When running around the room it seemed to help M that I accompanied his movements by a strong dance rhythm on the piano. I could then bring this playing to a stop and suggest that M returned to his playing. In this way his excitement was expressed but also contained.

As M became familiar with the predictable structure of the sessions, he gradually became more amenable to my suggestions and was willing to try out a wider range of instruments

and remain involved for longer periods of time. It seemed important to maintain familiar and 'popular' activities while at the same time always offering some new ideas so that M did not get bored with repetition. It was also important to respect the fact that M would be very intent and keen on a particular song or activity for a number of weeks and then suddenly decide he did not want this any longer and scream when it was suggested. Towards the end of our sessions together, M appeared to need occasional periods when he was able simply to listen to the music I was playing, while he cuddled up to his Mum and swayed gently.

Although M had very clear ideas of what he did or didn't want to do in the sessions, he always let me make some suggestions and would respond to musical ideas and prompting. Usually, he found it easier to accept indirect suggestions and I would rarely confront him directly other than suggesting we made an 'organised' ending to activities he wanted to finish (saying: "1,2,3….stop" together – and putting instruments back) rather than just dashing away from what he was doing.

M loved directing me musically, making me go to sleep, waking me up and then later making me march, run, turn and jump. With some encouragement, he would also let me reverse the roles and make him go to sleep or march. Occasionally, he would also direct his mum while I accompanied musically.

M seemed to be reassured by the predictable structure of the music therapy sessions. Even when he was in his most rebellious mode, he would always intensely enjoy some of the music-making and be very excited at times. This excitement sometimes felt somewhat 'wild' and 'over the top' but it was always possible to contain these moments with strong musical playing and M's behaviour never escalated to be out of control in the sessions. Perhaps it was a useful experience for M to know that these intense feelings of excitement could be expressed and contained.

M's mothers role in the sessions

Throughout the sessions, M's Mum was very supportive and encouraging. It was obviously moving and exciting for her to see him when he was so intensely involved in the music making. When he was in a negative frame of mind and resisted any suggestions made, she was always calmly helpful and positive.

Recommendations

M is very musical and loves being engaged in music making. However, the intense excitement that comes out of this love of music and the fact that he can strongly resist being directed in any way sometimes make it difficult for him to relax into the music making.

I think M may enjoy learning to play an instrument when he is a little older, although it would be important to find a teacher who understands his difficulties. In the mean time he might well benefit from some longer-term individual music therapy where the emphasis

could be on providing a space for M to express his strong emotions in a creative and contained environment.

Appendix 4.8.9: H's music therapy report.

Name: H **D.O.B**.: **Date**: 10.10. 2002

H was referred to music therapy by the speech and language therapist at the Child Development Centre in May 2001.

He was originally seen for two music therapy assessment sessions with his mother in October 2001. From February 2002 to October 2002, he had weekly, half-hour individual music therapy sessions (during school term time) with his mother at the Child Development Centre.

General musical likes and dislikes

H was clearly very interested in sound and music. He looked up when a 'new' sound (e.g. the clarinet) was played or when there was a sudden change in the playing and the singing. He particularly liked the sound of the clarinet and the piano in the lower register. When he was playing the piano, he listened carefully to what he was doing and seemed to be searching for specific pitches or tone colours.

He also liked both the sound and the visual and tactile aspect of the guitar, the autoharp, the snare drum and the ocean drum. He played most of the percussion instruments, but had only recently started to use a beater. He liked listening to wind instruments but did not use them himself. He generally played in bursts, quickly moving from one instrument to another, but sometimes remained focused on the piano or the ocean drums for up to ten minutes at a time. H clearly recognised a number of songs and particularly liked the crocodile version of 'Row Row Your Boat'.

General aims and objectives

- To help H to become more intensely involved in his playing and concentrate on any one activity for longer.
- To increase H's communication with myself and his mother. Eye contact, expectant gestures, exchanges, turn-taking.
- To increase H's tolerance of being led or directed.
- To give H a chance to have fun and express himself.
- To encourage H to vocalise freely.
- To support H's mother's efforts to play and interact with H.

Progress towards these aims

As sessions progressed, H was able to spend more time on his favourite activities such as piano playing, guitar playing, ocean drum playing or snare drum playing. On occasions he was also able to focus quite well on my clarinet playing and recently he became interested in using beaters on the Chinese cymbal. However, he still sometimes suddenly lost interest and needed encouragement to keep going.

H's interest in sounds and music was a very good way of encouraging him to be playful and communicative. He nearly always looked up in expectant silences and grinned

broadly when it came to the 'scream' in the crocodile song. At times he was so intent on playing an instrument such as the piano or the guitar in a particular way that he pushed my, or his mothers, hands away when we tried to play with him. At other times though, he has appeared to be aware of our sound exchanges, answering our musical questions and expecting our musical answers.

H quickly became reassured by the familiar structure of the sessions, and was usually quite willing to take up my suggestions even if he only played whatever was offered quite briefly. It took a lot of gentle suggestions to help H to try using beaters rather than his hands on instruments, but he very gradually became more daring in this respect, trying out different objects to hit the percussion instruments with. We didn't manage to persuade H to try blowing down an instrument but I expect he will do it by accident one day and may then be brave enough to try again.

H generally seemed to have very much enjoyed the sessions. He was always very happy (indeed sometimes impatient!) to come into the room. At times, he was very smiley and playful, purposefully walking/dancing around the room and showing great pleasure in some activities and songs.

H's vocalisations varied from week to week. Overall, I thought the variety and range of his vocal sounds increased. In June and July he seemed particularly vocal, often matching the pitches of the instruments we were playing and saying 'Mumum' in a purposeful way.

H's mother's role in the sessions

H's mother was always warm and supportive to H in the sessions. As sessions progressed and he became more engaged, she gradually became more involved in his playing and vocalising.

Conclusion and recommendations

Music therapy seems to be a very good way to engage H and to encourage him to communicate. I would recommend that he continues to have weekly music therapy sessions in his School as soon as possible.

Appendix 4.8.10: B's music therapy report.

Name: B **D.O.B**.: **Date**: 12.11.2002

B was referred to music therapy by the clinical psychologist at the child Development Centre in September 2001.

He was originally seen for two individual music therapy assessment sessions with his mother in November 2001. He then had weekly individual music therapy sessions (during term-time) with his mother or father between February 2002 and October 2002.

General musical likes and dislikes

Although B, was a little shy at first, it was very quickly apparent that he liked music and music-making. He seemed to enjoy playing all the simple percussion and wind instruments, but particularly liked the piano, which he could play for long periods of time without appearing to loose interest in what he is doing. He recognised familiar songs such as "Twinkle, Twinkle" and " The Wheels on the Bus" and would quietly sing along or fill in words in 'expectant' silences. He could follow changes of tempi, volume or style, although there were times when he could appear a little lost in his own playing. In general, he tended to follow my musical suggestions rather than initiate his own ideas, but as the sessions progressed he also made his own suggestions and enjoyed our free musical dialogues.

B enjoyed games where he could control adults by making them go to sleep or waking them up when he played certain instruments. He also had a lovely sense of fun and mischief, for example teasing us by repeatedly asking to sing about daddy in "The Wheels on the Bus" or laughing when we made funny noises on the wind instruments.

General aims and objectives

- To encourage B to play freely and spontaneously, with enthusiasm and enjoyment
- To encourage B to make choices and initiate changes
- To help B to have interactions with others, such as turn-taking or exchanging.
- To encourage B to vocalise freely and loudly as well as use words. (I hoped that his echolalic vocalisations and words would be replaced by spontaneous vocalisations and words).
- To provide an opportunity for B to interact freely with his mother or father through music making.

Progress towards these aims

As B gained confidence, he became more and more involved, and his playing became louder and more varied in style. Towards the end of the sessions, he was choosing exactly what he wanted to do and would even sometimes need encouragement to stop an activity. In these cases, it seemed to help him if we prepared him for the ending by saying something like: "….one more song before we finish, B". In general, B seemed to find the familiar structure of the sessions reassuring, without getting stuck in a set routine.

Although B would easily lose concentration in structured turn-taking, he gradually became more able to have spontaneous musical exchanges especially if the turn-taking included an element of 'fun' such as hiding beaters or sliding beaters under an instrument. It also helped to incorporate familiar song structures within the turn-taking activities.

As sessions progressed, B seemed to enjoy vocalising freely with me, particularly at the beginning of the session when we shared the guitar, or later on when we were running around the room together. He also enjoyed vocal exchanges on the Kazoos as well as when we sang 'into' the snare drum. He gradually used more words in the songs we sung together on the piano, and the words or short sentences he used such as "one, two, three finish"and "round and round" became clearer and easier to understand.

B's mother's and father's role in the sessions

B's mother and father were always very supportive to B during the sessions and, as sessions progressed, the musical interactions they had with him became more spontaneous and intense. They clearly enjoyed seeing how involved B was in the music making and were keen to help him in any way they could.

Recommendations

B obviously very much enjoys playing simple instruments and moving to music. He would almost certainly benefit from other opportunities to make music either individually or in groups as long as he is given time to get to know the people involved and gradually gain confidence in any new situation.

Appendix 4.9: The children's video analysis codes, figures and statistics

Appendix 4.9.1: W's video analysis codes, figures and statistics

Codes for W's video analysis

W.

- e: engaged
- ex: engaged with instrument
- m: active music making
- p: moves playfully
- v: vocalises
- w: words (or word like)
- n: negative behaviour
- im: interaction with Mum
- s: sings song
- os: out of shot
- b: blank
- tb: total boxes

Music therapist / Mother

- av: A. vocalises
- ao: A. plays instrument
- ap: A. plays piano
- ac: A. plays clarinet
- apl: A. moves playfully
- af: A. follows
- ae: A. attempts to engage
- ab: A. blank or out of shot
- mi: M. initiates
- ms: M. sings
- mp: M. play

W's video analysis tables

Table Ap.4.2: W's video analysis expressed as percentages

	W's codes									
Session number	PE	PEX	PM	PP	PV	PW	PN	PIM	POS	PB
1	27.16	.00	66.77	6.39	2.88	.00	.64	3.19	5.11	9.27
2	17.05	.00	60.08	.39	8.53	7.36	2.33	1.16	6.59	5.04
3	26.42	3.02	63.40	3.40	5.66	.00	4.15	3.02	1.51	5.28
4	26.80	1.72	51.20	8.25	5.50	.00	3.09	1.03	5.15	13.75
5	35.12	.00	32.44	6.69	12.37	1.00	7.69	1.34	11.04	14.38
6	31.25	.35	22.92	11.81	26.74	.00	1.74		10.07	13.89
7	22.31	.00	24.62	6.54	20.38	1.15	1.15	2.31	9.62	5.00
8	25.30	.40	62.06	3.16	7.91	1.58	.00		5.53	7.51
9	12.50	3.75	49.06	2.81	7.81	1.56	1.25	.94	12.81	18.13
10	20.15	1.83	43.22	1.83	18.32	.73	.00		8.42	19.78
11	28.24	6.64	67.11	1.33	6.98	4.32	1.66		2.66	4.98
12	34.07	4.42	33.44	.63	9.15	2.84	12.62	.63	4.42	14.51
13	24.12	4.67	36.96	15.56	20.23	.78	1.56	3.11	10.51	12.84
14	31.67	1.67	30.00	2.08	7.08	4.58	28.75	6.67	3.33	11.25
15	17.53	3.44	42.27	.34	6.87	2.41	1.03	.00	20.96	12.03
16	16.67	.00	53.33	.00	10.00	.83	.00	.42	7.08	17.50
17	44.18	4.82	20.48	.40	19.68	5.22	1.20		6.02	16.87
18	37.78	4.13	26.35	2.54	7.94	4.13	7.94		5.40	23.81
19	36.04	1.77	32.51	4.59	19.43	1.41	.35		3.18	23.32
20	41.67	2.00	30.33	15.67	12.33	1.00	.00	3.33	2.00	12.00
21	40.15	2.27	25.76	16.67	13.26	.38	.76		6.82	9.09
22	52.05	.00	27.40	6.85	5.14	.00	.00	4.11	4.11	11.64
23	41.57	.00	28.24	17.65	18.82	1.57	.00		4.31	12.16
24	37.56	.00	3.17	.00	8.60	5.43	60.18	2.71	1.81	9.50

Table Ap 4.3: Music Therapists video analysis figures during W's sessions expressed as percentages

	Music therapist's codes in W's sessions							
Session No.	PAV	PAO	PAP	PAC	PAPL	PAE	PAF	PAB
1	57.19	30.67	22.36	21.41	9.90	1.28	.00	5.11
2	72.09	19.38	25.97	8.53	.39	1.94	.00	10.08
3	78.49	35.09	23.77	4.53	6.42	3.77	.38	9.43
4	53.61	25.77	12.03	6.53	26.80	5.84	.34	7.90
5	82.27	17.39	34.11	.00	16.05	2.68	.00	10.03
6	85.42	4.17	22.92	.00	17.01	3.47	.00	4.86
7	80.00	5.38	32.31	9.23	10.00	4.23	.00	4.62
8	81.82	22.53	17.39	7.51	4.74	5.14	.00	5.93
9	74.38	7.19	53.13	3.44	5.00	3.75	.31	8.13
10	86.81	28.21	25.64	3.30	1.10	3.66	.37	4.40
11	77.41	16.94	35.88	6.64	1.66	3.32	.00	7.31
12	73.82	24.92	38.49	.00	3.47	1.89	.00	12.93
13	73.54	8.95	33.07	8.95	23.35	1.95	.00	3.50
14	62.92	20.42	27.92	4.58	10.42	5.42	.42	13.75
15	54.30	12.71	24.74	14.43	2.75	2.06	.34	15.46
16	70.42	15.42	39.17	2.08	2.08	1.67	.00	15.42
17	75.50	26.91	12.45	5.22	.40	5.62	.00	10.84
18	72.70	34.92	33.33	9.52	.95	3.49	.00	8.25
19	75.27	22.26	25.80	11.31	27.92	3.89	1.06	3.18
20	57.00	18.67	34.00	3.00	17.33	2.00	.33	10.67
21	83.71	15.15	19.32	5.68	27.65	2.27	.00	4.55
22	39.38	18.15	18.49	7.19	14.38	3.08	.00	27.40
23	86.67	19.22	14.51	.00	39.61	3.92	.00	4.71
24	27.15	5.88	5.43	3.17	4.98	5.43	.00	54.75

Table Ap. 4.4: W's mother's video-analysis expressed as percentages

	W's mother's codes		
Session No.	PMI	PMS	PMP
1	1.92	.00	.32
2	.39	2.33	.00
3	6.79	1.51	.00
4	.69	.34	.00
5	1.67	.00	.00
6			
7	.77	.00	.00
8			
9	2.81	1.25	.31
10			
11			
12	3.15	1.58	.32
13	16.34	2.72	.39
14	22.08	1.67	.42
15	1.03	1.37	16.49
16	9.17	2.50	.00
17			
18			
19			
20	11.00	1.00	4.00
21			
22	26.71	3.77	.00
23			
24	19.46	17.19	16.29

W's statistics

Table Ap. 4.5

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
perc. A. vocalises	24	27.15	86.81	70.0771	15.16800
perc. A plays instr.	24	4.17	35.09	19.0126	8.83429
perc. A. plays piano	24	5.43	53.13	26.3427	10.58193
perc. A. plays clari	24	.00	21.41	6.0938	4.99506
perc. A. moves	24	.39	39.61	11.4321	10.92108
perc. A. blank / out od shot	24	3.18	54.75	10.9669	10.75060
Valid N (listwise)	24				

Table Ap. 4.6: W's Significance tests

W.	Correlation Coefficient	Sig. (2 tailed)	Significance
Pe	.396	.007	Sig. at .01 level
Pex	.080	.595	NS
Pm	-.454	.002	Sig. at .01 level
Pp	-.007	.960	NS
Pv	.142	.333	NS
Pw	.203	.170	NS
Ps	-.204	.176	NS
Pn	-.194	.193	NS
Pim	.029	.882	NS
Pb	.142	.333	NS
Pmp	.426	.036	Sig. at .05 level
Pms	.444	.022	Sig. at .05 level
Pmi	.562	.004	Sig. at .01 level

Appendix 4.9.2: J's video analysis codes, figures and statistics

Codes for J's video analysis

J.

- e: engaged
- ex: choosing / engaged with instrument
- m: active music-making
- mx: active music-making with help
- im: interaction with Mum
- v: vocalises
- p: moves playfully
- n: negative behaviour
- os: out of shot
- b: blank
- tb: total boxes
- mx: plays with help

Music therapist / Mother

- av: A. vocalises
- ao: A. plays instrument
- ap: A. plays piano
- ac: A. plays clarinet
- apl: A. moves playfully
- af: A. follows
- ae: A. attempts to engage
- aos: A. out of shot
- ab: A. blank
- mi: M. attempts to engage or plays

J's video analysis tables

Table Ap.4.7: J's video analysis expressed as percentages

	J's codes								
Ses. No.	PE	PEX	PM	PP	PV	PIM	PN	POS	PB
1	29.31	3.02	46.53	6.95	12.08	2.42	.00	9.97	11.18
2	28.78	3.32	32.47	12.18	14.39	6.64	8.49	8.49	14.02
3	34.44	4.98	27.39	8.71	6.64	4.98	4.56	18.67	19.92
4	42.58	2.87	39.23	24.40	18.18	3.83	2.39	8.61	6.22
5	44.88	3.15	39.76	17.32	22.05	.00	.00	7.09	7.48
6	47.23	10.21	36.17	23.40	27.66	1.70	1.70	6.81	6.81
7	42.98	8.33	19.30	21.05	21.49	2.19	2.19	5.26	14.04
8	50.59	5.53	24.51	10.67	17.79	1.19	.40	9.49	15.42
9	25.93	5.09	36.11	6.02	14.35	1.85	2.31	6.48	18.06
10	24.74	3.48	36.24	8.01	19.16	1.39	.00	9.06	17.77
11	42.25	5.81	43.80	3.49	18.60	3.49	.00	6.98	8.91
12	39.59	5.31	37.14	13.47	19.18	.82	.41	5.31	10.61
13	41.75	4.37	40.29	4.85	15.05	4.85	.00	3.40	15.53
14	38.72	4.68	35.74	17.02	27.23	2.55	.00	5.53	8.09
15	39.68	9.31	37.25	6.88	15.79	3.24	1.21	10.53	7.69
16	29.09	2.91	41.45	8.73	26.18	4.00	.73	10.18	9.09
17	36.39	2.04	38.10	3.74	22.45	5.44	1.36	5.44	14.63
18	43.06	1.39	39.35	5.09	21.30	2.78	.00	10.65	12.50
19	34.90	.78	39.22	5.10	22.75	3.92	1.57	6.27	9.80
20	37.85	1.40	37.38	9.81	21.03	3.27	1.40	6.54	15.89
21	36.11	1.85	31.02	3.70	19.91	1.85	.00	11.11	13.89
22	34.35	6.96	46.52	14.35	21.30	2.61	.00	7.39	4.35
23	32.11	3.66	52.03	8.94	9.35	5.69	.00	8.94	8.13
24	35.57	9.88	31.62	1.58	10.28	1.98	1.98	5.14	17.00
25	48.31	3.00	50.19	5.24	20.97	4.49	.00	2.62	4.87

Table Ap.4.8: J's playing bouts

Session number	Number of bouts	Average length of bouts	Longest bout
1	55	3	15
2	32	3	7
3	23	3	12
4	24	3	13
5	25	4	28
6	32	3	12
7	17	3	10
8	27	2	10
9	21	4	11
10	30	3	17
11	27	4	29
12	25	4	13
13	25	3	22
14	34	2	12
15	18	5	18
16	22	5	22
17	23	5	23
18	27	3	27
19	27	4	27
20	26	3	26
21	23	3	12
22	25	4	16
23	31	4	14
24	30	3	8
25	30	4	37

Table Ap.4.9: Music therapist's video-analysis figures during J's sessions, expressed as percentages

	Music therapists codes in J's sessions							
Session number	PAV	PAO	PAP	PAC	PAPL	PAF	PAE	PAB
	62.24	36.86	27.19	.00	9.06	1.51	6.04	9.67
2	72.32	38.75	9.59	1.85	16.97	1.48	6.27	7.75
3	53.94	34.85	14.94	10.37	9.96	.41	3.32	17.84
4	93.30	37.80	17.70	.00	24.40	.96	6.22	7.66
5	78.74	34.65	3.15	7.09	20.08	1.18	3.94	5.51
6	74.89	48.51	9.36	.00	31.49	.85	5.53	10.64
7	82.46	32.46	23.25	.00	22.37	1.32	2.63	4.39
8	69.17	18.18	26.09	3.16	22.92	1.58	6.32	13.83
9	71.30	21.30	21.76	13.43	8.33	.93	5.09	8.80
10	67.25	28.57	14.98	.00	11.85	.70	10.45	15.68
11	66.28	25.19	29.46	11.24	8.91	.78	3.88	6.20
12	65.31	26.53	18.37	5.31	13.47	6.12	11.84	6.53
13	60.19	24.76	31.07	6.80	3.88	1.94	5.83	7.77
14	65.11	29.79	30.64	4.68	5.96	2.13	4.26	5.96
15	66.80	42.91	8.10	7.29	12.15	4.45	7.69	9.72
16	61.09	42.91	12.36	10.18	6.18	.73	6.18	9.45
17	67.01	29.25	18.03	4.42	5.10	1.02	6.80	14.29
18	66.20	32.87	19.91	13.43	7.41	1.39	3.70	10.65
19	75.69	27.06	21.18	10.20	6.67	.78	4.71	8.24
20	51.87	25.23	18.69	12.15	23.83	2.34	4.67	16.36
21	71.30	37.04	12.04	12.50	4.17	.93	5.09	9.72
22	57.39	32.61	12.61	16.09	23.48	2.17	4.35	10.43
23	53.66	26.83	21.14	8.94	20.33	.81	4.07	10.98
24	49.01	27.67	12.25	8.70	5.14	1.58	1.58	29.25
25	66.29	40.45	13.11	6.74	16.48	7.87	3.00	7.87

Table Ap.4.10: J's mother's video-analysis figures expressed as percentages

	J's mother's codes
Session number	PMI
1	.00
2	.00
3	1.24
4	.00
5	.00
6	2.55
7	.00
8	.40
9	.00
10	.00
11	.39
12	.00
13	2.43
14	3.40
15	1.21
16	.00
17	.00
18	.46
19	.00
20	.00
21	.00
22	.00
23	.41
24	.40
25	.00

J's statistics

Table Ap.4.11:

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
perc. Am. vocalises	25	49.01	93.30	66.7521	9.95864
perc. Am. plays instr.	25	18.18	48.51	32.1208	7.36114
perc. Am. plays piano	25	3.15	31.07	17.8780	7.39621
perc. Am. plays clari	25	.00	16.09	6.9819	4.91454
perc. Am. moves	25	3.88	31.49	13.6235	7.97258
perc. Am blank	25	4.39	29.25	10.6064	5.20504
Valid N (listwise)	25				

Table Ap.4.12: J's significance tests

J.	Correlation coefficient	Sig. (2 tailed)	Significance
Pe	-.073	.607	NS
Pex	-.120	.400	NS
Pm	.233	.102	NS
Pmx	-.126	.453	NS
Pv	.120	.400	NS
Pp	-.320	.025	Sig. at .05 level
Pn	.255	.091	NS
Pb	-.073	.607	NS
Pim	.130	.392	NS
Pmi	.008	.958	NS
Av.l.bouts	.227	.112	NS
L.bouts	.258	.075	NS

Appendix 4.9.3: Mi's video analysis codes, figures and statistics

Codes for Mi's video analysis

Mi.

e: engaged
ex: engaged with instrument
m: active music-making
mx: plays with help
im: interaction with Mum
v: vocalises
mo: moves playfully
c: crying
os: out of shot
b: blank
- tb: total boxes

Music therapist / Mother

av: A. vocalises
ao: A. plays instrument
ap: A. plays piano
ac: A. plays clarinet
apl: A. moves playfully
af: A. follows
ae: A. attempts to engage
as: A. sings song
aos: A. out of shot
ab: A. blank
mi: M. initiates
mf: M. follows

Mi's video analysis tables

Table Ap.4.13: Mi's video analysis figures expressed as percentages

	Mi's codes									
Session Number	PE	PEX	PM	PMX	PIM	PV	PC	PMO	POS	PB
1	27.96	2.63	14.80	.00	4.93	6.58	12.50	.00	32.24	11.84
2	30.00	3.08	13.85	.38	.00	10.77	.00	7.31	26.54	16.15
3	28.93	6.09	19.80	.00	3.55	2.03	10.15	.51	17.26	19.80
4	37.79	9.88	15.12	.00	12.21	19.19	4.07	4.07	7.56	13.95
5	41.39	4.92	25.00	.00	5.33	5.33	.00	1.23	4.10	20.49
6	49.49	.34	16.04	.68	7.85	7.85	1.02	1.02	6.83	17.41
7	77.37	1.22	7.95	1.53	14.07	9.79	.00	1.22	7.95	20.18
8	55.10	3.50	6.05	.00	3.18	6.37	.00	.96	7.01	20.70
9	48.64	10.88	12.59	.00	2.38	3.40	.00	1.36	3.06	22.45
10	35.55	7.81	13.28	4.69	9.38	.78	.00	.00	11.72	22.66
11	43.48	9.13	7.39	.00	3.91	3.04	.00	.87	9.13	24.78
12	41.96	6.29	11.19	.70	11.89	3.85	.00	2.10	10.84	19.58
13	50.31	.31	17.90	.00	5.86	4.01	.00	1.85	6.79	16.36
14	44.93	1.92	11.78	5.75	3.29	5.48	.00	2.47	3.29	27.40
15	54.69	.00	16.83	.65	7.12	9.39	.00	.00	6.80	12.94
16	35.57	.67	10.07	3.69	7.38	13.09	1.01	.00	7.72	28.19
17	45.28	6.60	17.61	1.57	6.92	6.60	.63	.94	4.40	19.50
18	40.96	2.71	15.36	.60	9.64	9.34	.00	2.11	8.13	20.78
19	32.29	7.14	8.86	.57	9.43	21.71	.00	.00	7.14	23.71
20	39.25	6.23	12.46	4.05	9.66	4.36	.93	1.56	8.41	24.92
21	42.40	3.89	16.61	1.41	13.07	7.77	.00	.71	5.65	18.37
22	45.49	.35	14.93	1.39	11.81	3.47	.00	5.90	10.07	17.36
23	60.40	6.27	4.62	3.63	7.59	6.60	.66	.66	5.61	13.53
24	60.58	.96	10.58	.64	5.45	2.56	.00	.32	4.49	21.79

Table Ap.4.14: Mi's playing bouts

Session number	Number of bouts	Average length of bouts	Longest bout
1	27	2	4
2	20	2	5
3	14	3	21
4	12	2	8
5	26	2	10
6	23	2	6
7	20	1	5
8	12	2	4
9	19	2	8
10	14	2	8
11	11	2	5
12	12	3	13
13	18	3	29
14	18	2	7
15	22	2	8
16	19	2	5
17	25	2	9
18	22	2	17
19	17	2	8
20	19	2	7
21	16	3	11
22	17	3	6
23	9	2	4
24	14	2	11

Table Ap.4.15: Music therapist's video analysis figures during Mi's **sessions, expressed as percentages**

	Music therapist's codes during Mi's sessions							
Session Number	PAV	PAO	PAP	PAC	PAMO	PAF	PAE	PAB
1	77.30	22.04	20.72	.00	4.61	.66	6.25	6.58
2	62.31	24.62	27.69	14.23	12.31	.38	5.77	5.77
3	64.97	24.87	16.24	13.71	3.55	1.02	5.08	9.64
4	71.51	27.33	22.09	.00	19.19	.58	9.88	4.65
5	71.72	27.05	14.34	7.38	10.25	.41	8.61	6.56
6	75.43	17.41	27.30	.00	5.12	1.37	3.75	8.19
7	74.31	20.18	14.98	10.09	11.31	2.14	4.59	10.70
8	66.88	10.83	9.24	11.15	2.23	1.27	3.18	12.10
9	70.41	10.54	11.56	8.84	.68	1.70	3.74	8.50
10	71.88	17.19	11.72	7.42	3.91	.78	4.30	12.11
11	52.61	11.74	19.13	16.52	1.30	1.74	2.17	12.61
12	69.93	22.03	28.67	6.99	2.45	1.40	4.55	8.74
13	61.42	12.04	23.15	7.10	.00	.62	2.78	16.67
14	61.64	19.73	30.68	11.78	.82	1.64	3.01	12.60
15	58.90	19.74	17.48	5.18	.00	3.56	7.77	10.36
16	77.85	18.12	27.18	.00	1.01	1.68	2.35	10.07
17	63.84	14.78	18.24	17.61	1.57	.31	3.46	12.26
18	56.63	25.00	18.37	14.46	5.42	3.31	2.41	9.94
19	72.00	17.71	16.86	13.43	3.43	1.14	1.14	4.29
20	52.65	22.12	20.87	7.48	2.18	1.25	2.49	11.21
21	66.08	52.65	19.79	14.49	6.01	1.06	1.77	8.83
22	64.93	9.72	14.24	6.25	3.13	9.72	7.99	8.68
23	61.06	13.20	11.55	7.26	.00	.66	4.62	19.80
24	64.74	20.19	9.94	10.58	1.28	2.88	1.28	11.54

Table Ap.4.16: Mi's mother's video analysis figures expressed as percentages

	Mi's mother's codes	
Session number	PMI	PMF
1	.33	.00
2	.00	.00
3	.00	.00
4	1.16	.00
5	.82	.00
6	.00	.00
7	5.50	.00
8	2.23	.00
9	5.78	.00
10	7.03	.39
11	7.83	.00
12	3.85	.00
13	2.16	.00
14	9.04	.00
15	2.91	3.24
16	.67	.00
17	3.77	.00
18	5.72	.00
19	5.43	.00
20	4.05	.00
21	8.48	.00
22	5.90	.00
23	6.27	.00
24	4.81	.00

Mi's statistics

Table Ap.4.17

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
perc. A. vocalises	24	52.61	77.85	66.2913	7.14991
perc. A. other instr.	24	9.72	52.65	20.0343	8.74784
perc. A. piano	24	9.24	30.68	18.8354	6.22762
perc. A clari	24	.00	17.61	8.8307	5.27243
perc. A. moves	24	.00	19.19	4.2394	4.69612
perc. A. blank	24	4.29	19.80	10.1005	3.52240
Valid N (listwise)	24				

Table Ap.4.18: Mi's significance tests

Mi	Correlation Coefficient	Sig. (2 tailed)	Significance
Pe	.268	.066	NS
Peadj	.336	.025	Sig. at .05 level
Pex	-.080	.585	NS
Pm	-.167	.254	NS
Pmx	.352	.020	Sig. at .05 level
Pv	-.029	.843	NS
Pc	-.212	.191	NS
Pmo	-.089	.550	NS
Pb	.196	.180	NS
Pim	.283	.053	NS
Pimadj	.352	.019	Sig. at .05 level
Pmi	.441	.003	Sig. at .01 level
Pmf	.009	.958	NS
Av.l.bouts	.109	.113	NS
L.bouts	.457	.452	NS

Appendix 4.9.4: 'I's video analysis codes, figures and statistics

Codes for I's video analysis

I.

e: engaged
ex: engaged with instrument
m: active music-making
p: moves playfully
v: vocalises
w: uses words
r: rejects
n: negative behaviour
im: initiates interaction with Mum
os: out of shot
b: blank
- tb: total boxes

Music therapist / Mother

av: A. vocalises
ao: A. plays instrument
ap: A. plays piano
ac: A. plays clarinet
apl: A. moves playfully
ae: A. attempts to engage
af: A. follows
ab: A. blank or out of shot
mae: M. attempts to engage
mf: M. follows
mp: M. plays
mpl: M. moves playfully

‘I’s tables

Table Ap.4.19: ‘I’s video analysis figures expressed as percentages

	‘I’s codes										
Session Number	PE	PEX	PM	PP	PV	PW	PR	PN	PIM	POS	PB
1	24.11	7.09	47.52	21.63	23.40	.71	.35	.00	6.38	4.96	8.87
2	22.05	6.65	42.90	17.52	10.88	.30	.00	.00	5.14	11.78	9.06
3	14.15	5.66	49.06	9.43	9.75	.00	.00	.00	.00	15.09	13.84
4	18.08	6.27	38.75	4.06	11.44	.37	2.58	.00	14.02	16.61	14.76
5	19.43	8.13	60.07	13.07	4.95	1.06	.71	.00	2.83	9.19	7.42
6	12.50	6.25	47.50	6.67	13.33	1.25	2.50	.00	10.00	8.75	12.08
7	17.30	2.95	29.54	17.30	21.10	5.91	1.69	3.38	6.33	20.25	7.59
8	27.68	1.79	42.41	18.75	3.13	.45	1.79	2.68	4.91	17.86	7.59
9	15.57	.35	29.76	4.15	6.23	4.50	2.42	11.07	5.19	27.68	6.23
10	18.92	.45	26.58	33.33	12.16	1.80	1.35	23.87	14.86	6.76	4.95
11	26.48	.35	37.63	21.25	18.12	12.20	.35	16.03	5.57	4.53	7.67
12	27.06	.88	31.76	15.29	17.65	4.12	.59	.00	7.06	10.59	15.88
13	26.74	3.30	41.03	11.36	16.48	1.83	1.83	.00	1.47	8.42	13.92
14	31.50	1.47	35.16	9.52	20.15	2.20	1.10	1.47	3.30	10.99	12.82
15	13.10	1.19	15.48	11.61	22.62	2.08	1.49	.30	14.88	22.92	17.86
16	16.82	4.55	18.64	9.09	6.82	.91	5.00	.91	12.73	30.45	13.18
17	17.91	3.04	20.27	24.32	13.18	1.69	3.04	1.69	33.45	17.23	4.73
18	19.82	6.51	24.26	10.65	5.92	6.51	.89	2.37	25.74	7.69	15.09
19	23.55	2.48	29.75	12.40	9.09	2.89	1.65	8.68	17.77	5.79	12.81
20	24.23	4.29	19.02	11.96	12.27	11.96	1.84	7.67	23.01	4.29	15.64

Table Ap.4.20: 'I's playing bouts

Session number	Number of bouts	Average length of bouts	Longest bout
1	34	4	36
2	33	4	18
3	31	5	44
4	30	4	15
5	31	5	20
6	31	4	14
7	21	3	18
8	17	6	23
9	14	6	27
10	10	6	26
11	17	6	23
12	17	6	51
13	28	4	27
14	23	4	21
15	24	2	15
16	16	3	9
17	17	4	15
18	35	2	6
19	21	3	16
20	18	3	15

Table Ap.4.21: Music therapist's video-analysis figures during 'I's sessions expressed as percentages

	Music therapist's codes during 'I's sessions							
Session number	PAV	PAO	PAP	PAC	PAPL	PAE	PAF	PAB
1	63.48	16.67	34.75	6.74	11.70	4.61	.35	7.45
2	75.23	25.68	28.10	3.93	8.16	6.04	.60	5.74
3	58.18	23.90	39.31	10.69	4.72	5.35	.00	6.60
4	54.24	30.63	21.77	9.96	.74	7.01	.00	17.34
5	49.47	27.56	28.27	10.95	2.47	8.13	.71	9.89
6	51.25	16.25	31.25	17.92	.42	13.75	.00	7.92
7	67.93	32.91	21.94	6.75	8.02	9.28	.00	7.17
8	46.43	11.16	20.54	10.27	11.61	10.27	.00	16.52
9	50.52	16.26	28.72	1.38	5.19	16.96	.35	9.69
10	65.77	8.56	42.34	8.11	7.66	4.50	.90	3.15
11	35.19	16.38	41.11	4.53	11.15	2.79	.35	15.68
12	50.59	10.00	41.47	1.76	16.18	5.88	.88	9.41
13	41.03	16.12	38.46	3.66	11.72	9.89	2.56	12.82
14	60.44	18.32	38.46	1.83	5.13	9.52	.73	9.89
15	52.98	9.23	36.31	8.93	7.74	6.55	1.79	16.07
16	61.36	17.27	25.45	11.82	7.73	7.27	.00	11.82
17	55.07	6.76	47.97	4.73	9.80	6.76	.68	11.49
18	58.28	14.20	35.50	11.83	8.58	6.80	.59	7.69
19	60.74	15.29	16.53	6.61	18.18	5.37	4.55	8.68
20	59.51	15.03	13.50	4.60	3.07	7.36	.92	23.31

Table Ap.4.22: 'I's mother's video analysis expressed as percentages

	'I's mother's codes			
Session number	PMAE	PMF	PMP	PMPL
1	6.74	2.48	.00	.00
2	.91	.00	1.21	.00
3	.00	.00	8.18	.00
4	8.12	5.17	.00	.00
5	4.24	.00	18.73	.00
6	11.67	.42	21.25	.00
7	7.17	1.69	8.02	.00
8	2.68	.00	15.63	.00
9	8.30	.00	21.80	.69
10	13.06	2.25	20.72	3.15
11	6.62	3.48	17.07	.00
12	.59	1.18	14.12	5.59
13	.73	1.10	15.75	6.23
14	2.56	.73	13.19	5.86
15	8.33	6.25	.00	4.46
16	21.36	9.09	.00	1.36
17	5.74	4.73	13.51	14.19
18	6.21	.00	12.43	10.06
19	7.44	10.74	.00	7.44
20	6.75	.61	4.91	.00

'I's statistics

Table Ap.4.23:

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
perc. A. vocalises	20	35.19	75.23	55.8838	9.29837
perc. A. plays instr.	20	6.76	32.91	17.4082	7.28580
perc. A. plays piano	20	13.50	47.97	31.5880	9.48432
perc. A. plays clari.	20	1.38	17.92	7.3507	4.23332
perc. A. moves playfully	20	.42	18.18	7.9972	4.68424
perc. A. out of shot or blank	20	3.15	23.31	10.9169	4.82517
Valid N (listwise)	20				

Table Ap.4.24: Significance tests

'I'	Correlation coefficient	Sig. (2 tailed)	Significance
Pe	.137	.399	NS
Pex	-.221	.173	NS
Pm	-.568	.000	Sig at .01 level
Pp	-.032	.846	NS
Pv	.000	1.000	NS
Pw	.453	.005	Sig. at .01 level
Pr	.248	.127	NS
Pn	.399	.019	Sig. at .05 level
Pim	.411	.011	Sig. at .05 level
Pb	.179	.270	NS
Pmae	.137	.399	NS
Pmf	.258	.122	NS
Pmp	-.119	.471	NS
Pmpl	.584	.001	Sig at .01 level
Av.l.bouts	.206	.206	NS
L.bouts	-.286	.084	NS

Appendix 4.9.5: Ma's video analysis codes, figures and statistics

Codes for Ma's video analysis

Ma.

e: engaged
ex: engaged with instrument
m: active music-making
p: moves playfully
v: vocalises
r: rejects
n: negative behaviour
w: uses a word
ra: responds to A.
rd: responds to Dad
id: initiates interaction with Dad
os: out of shot
b: blank
- tb: total boxes

Music therapist / Father

av: A. vocalises
ao: A. plays instrument
ap: A. plays piano
ac: A. plays clarinet
apl: A. moves playfully
af: A. follows
ae: A. attempts to engage
as: A. sings song
aos: A. out of shot
ab: A. blank
dae: Dad attempts to engage
df: Dad follows
mp: Dad plays
t: Dad talks to A.

Ma's video analysis tables

Table Ap.4.25: Ma's video analysis expressed as percentages (table a)

	Ma's codes							
Session Number	PE	PEX	PM	PP	PV	PR	PN	PW
1	7.48	.00	59.52	.00	20.41	.00	.68	.68
2	5.73	.26	45.05	.00	31.51	.00	.26	.26
3	3.57	.24	57.62	.00	7.86	.00	7.62	3.57
4	7.01	.00	59.22	.52	2.86	.26	4.16	.26
5	8.39	.00	54.04	1.55	13.35	.00	.00	.31
6	4.70	.94	51.72	.94	5.64	.00	.31	.00
7	2.52	1.58	53.94	.63	10.41	.32	.00	.32
8	3.60	.00	69.67	.00	6.01	.00	.00	1.50
9	3.96	.00	73.48	.00	6.10	.61	.00	.30
10	7.30	.00	60.22	1.09	10.22	.00	.00	1.82
11	4.23	1.30	65.15	1.30	8.79	.00	.65	.98
12	12.30	.00	67.49	.82	.82	.00	2.19	.00
13	2.71	.27	66.40	.00	6.50	.27	1.63	.81
14	5.77	.32	74.04	.00	5.13	.32	.32	.00
15	13.28	.00	63.28	.28	6.78	.00	.56	.85
16	11.59	.00	69.28	.00	2.32	.00	.58	.29
17	5.04	.00	78.34	.59	15.73	.59	.00	2.67
18	12.70	.32	57.46	2.86	8.57	.63	.00	.00

Table Ap.4.26: Ma's video analysis expressed as percentages (table b)

	Ma's codes				
Session Number	PRA	PRD	PID	POS	PB
1	1.70	1.36	7.14	7.82	8.84
2	3.13	7.03	2.34	1.30	15.89
3	1.67	1.19	10.48	2.62	15.24
4	5.71	3.38	10.13	3.64	11.17
5	10.25	.62	6.21	8.70	9.63
6	8.78	5.64	3.45	7.21	25.08
7	16.72	10.41	11.36	5.05	10.73
8	5.41	3.00	4.80	2.70	11.71
9	7.01	6.10	5.79	6.40	7.01
10	6.20	8.76	3.65	4.01	12.41
11	11.40	.33	5.86	4.23	8.47
12	4.10	.27	4.92	.82	12.30
13	17.89	5.96	5.15	2.44	10.03
14	17.31	11.86	2.56	2.24	7.69
15	5.08	6.78	.00	2.26	17.23
16	4.35	2.90	3.77	1.45	13.91
17	10.39	13.95	5.34	.59	5.04
18	38.10	6.98	12.06	3.81	9.84

Table Ap.4.27: Music therapist's video analysis figures during Ma's sessions expressed as percentages

	Music therapist's codes during Ma's sessions								
Session number	PAV	PAO	PAP	PAC	PAPL	PAE	PAF	PAS	PAB
1	68.03	13.61	26.53	5.44	1.02	5.44	1.36	1.02	12.59
2	58.33	4.17	15.36	5.47	1.30	4.95	.26	.52	16.93
3	44.52	1.43	17.86	8.57	1.67	2.14	.00	.24	34.76
4	52.99	8.57	23.12	10.91	2.86	9.61	4.16	.52	18.96
5	52.80	9.32	22.05	13.98	10.25	4.66	5.59	1.24	15.84
6	52.98	6.90	21.32	9.40	6.90	3.45	.94	1.57	25.39
7	57.73	13.88	19.87	9.78	3.79	6.94	1.58	.63	17.03
8	54.05	12.31	20.12	.00	4.80	5.11	.60	1.50	27.03
9	50.91	13.41	27.74	14.63	1.22	5.49	.91	.91	15.24
10	43.07	15.33	24.45	8.39	3.65	5.11	1.09	1.82	27.37
11	40.39	9.45	14.98	21.17	7.49	5.21	.00	1.30	24.10
12	42.62	14.75	9.02	12.57	.55	4.37	1.09	1.91	26.23
13	31.98	20.05	14.91	6.23	4.34	5.96	.00	2.17	34.69
14	44.23	10.58	12.50	15.06	2.24	14.10	2.56	1.60	16.99
15	41.53	4.52	35.31	6.21	.00	5.65	1.41	.85	20.90
16	35.65	14.49	31.88	.00	.00	6.09	1.16	1.74	28.41
17	43.32	10.68	35.61	9.79	3.26	5.64	.30	.30	14.84
18	50.16	12.06	23.17	20.32	.63	11.75	1.59	.95	7.30

Table Ap.4.28: Ma's father's video analysis expressed as percentages

	Ma's father's codes			
Session number	PDAE	PDF	PDP	PT
1	24.83	.00	3.74	.00
2	17.97	1.04	7.81	1.56
3	39.05	.71	10.71	5.24
4	29.35	5.71	11.17	.00
5	18.94	2.17	7.76	.00
6	18.50	5.64	13.17	.00
7	23.03	8.83	5.99	.32
8	27.03	7.21	10.81	4.20
9	15.24	10.06	16.77	.00
10	36.50	16.79	2.55	.00
11	11.07	8.47	9.77	.00
12	25.14	4.37	12.02	.82
13	21.95	5.69	5.15	.00
14	29.81	4.49	4.17	.00
15	57.91	1.69	4.24	.28
16	20.29	1.16	3.48	.00
17	32.94	3.86	.59	2.67
18	21.59	4.76	2.54	.00

Ma's statistics

Table Ap.4.29

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
perc. A.vocalises	18	31.98	68.03	48.0717	8.86260
perc. A. plays instruments	18	1.43	20.05	10.8617	4.59535
perc. A. plays piano	18	9.02	35.61	21.9894	7.47671
perc. A. plays clarinet	18	.00	21.17	9.8856	5.82226
perc. A. moves playfully	18	.00	10.25	3.1093	2.82626
perc. A blank or out of shot	18	7.30	34.76	21.3667	7.55835
Valid N (listwise)	18				

Table Ap.4.30: Significance tests

Ma.	Correlation Coefficient	Sig. (2 tailed)	Significance
Pe	.216	.211	NS
Pex	.000	1.000	NS
Pm	.420	.017	Sig. at .05 level
Pra	.359	.037	Sig. at .05 level
Prd	.229	.185	NS
Pid	-.150	.384	NS
Ppl	.152	.403	NS
Pv	-.203	.240	NS
Pw	.047	.790	NS
Pr	.359	.056	NS
Pn	-.155	.389	NS
Pb	-.163	.344	NS
Pdi	.085	.622	NS
Pdf	.098	.570	NS
Pdp	-.359	.037	Sig. at .05 level

Appendix 4.9.6: E's video analysis codes, figures and statistics

Codes for E's video analysis

E.

e: engaged
pex: engaged with instrument
m: active music-making
ra: responds to A.
rm: responds to Mum
im: interaction with Mum
p: moves playfully
i: initiates
r: rejects / resists
te: talks in an echolalic way
ti: talks spontaneously
os: out of shot
b: blank
- tb: total boxes

Music therapist / Mother

av: A. vocalises
ao: A. plays instrument
ap: A. plays piano
ac: A. plays clarinet
apl: A. moves playfully
af: A. follows
ae: A. attempts to engage
as: A. sings song
ab: A. blank or out of shot
mae: M. attempts to engage
mp: M. plays
mf: M. follows
mt: M. talks

E's video analysis tables

Table Ap.4.31: E's video analysis figures expressed as percentages (table a)

	E's codes							
Session number	PE	PEX	PM	PP	PI	PR	PTE	PTI
1	18.32	.00	9.16	.00	8.06	10.62	2.56	1.47
2	16.30	.00	19.61	.55	12.71	4.70	5.80	1.10
3	18.78	.00	24.86	.00	11.05	.00	4.70	1.38
4	.00	2.58	24.36	.57	11.46	7.74	5.16	15.19
5	20.09	.00	20.53	.44	7.28	3.75	4.42	6.62
6	23.10	.00	17.32	.00	.52	12.34	.26	12.34
7	23.91	.00	9.33	.00	1.17	12.54	2.04	19.53
8	9.63	.00	30.75	.00	3.42	.62	1.55	2.80
9	12.90	1.17	34.02	.00	5.57	.00	1.17	4.99
10	10.95	.00	26.45	.00	5.58	4.34	.41	13.02
11	11.28	.00	25.22	.30	7.72	8.90	.59	7.42
12	14.24	.00	34.81	1.58	13.92	.63	1.27	14.24
13	17.76	.00	31.66	.00	7.72	.39	.39	10.42
14	14.48	.00	30.69	.00	13.10	3.45	.69	22.76
15	15.34	.00	24.11	3.56	10.14	2.47	.82	16.44
16	20.96	.00	18.90	.00	9.62	5.50	.69	19.93
17	16.16	.00	16.99	.27	15.34	.00	.82	10.14
18	19.13	.00	15.65	.29	8.41	1.16	.29	11.30
19	.00	.00	31.12	1.73	15.27	2.02	1.44	20.46
20	12.46	.00	19.88	.00	2.97	15.43	.89	22.26

Table Ap.4.32: E's video analysis figures expressed as percentages (table b)

	E's codes				
Session number	PRA	PRM	PIM	POS	PB
1	9.89	20.51	11.72	3.66	5.49
2	19.89	6.63	6.08	6.35	4.70
3	15.47	7.18	8.29	6.08	6.08
4	16.05	6.88	4.01	4.01	19.48
5	3.09	.44	5.96	3.53	28.26
6	1.05	.79	15.49	3.94	13.12
7	.29	.29	11.95	2.04	19.24
8	24.53	5.90	4.35	2.48	13.35
9	15.54	7.33	3.81	1.76	13.78
10	11.16	6.61	9.71	1.65	12.60
11	9.20	.59	9.79	4.45	10.09
12	8.23	.63	3.80	2.85	11.08
13	13.51	9.65	5.41	1.16	5.02
14	14.48	1.38	5.86	2.07	2.07
15	12.88	3.84	7.67	3.29	6.85
16	16.49	2.06	3.44	4.12	6.19
17	20.55	4.38	4.66	4.66	6.30
18	17.39	5.51	12.46	5.80	8.41
19	12.68	1.15	1.44	6.34	16.14
20	10.68	4.75	5.64	5.93	8.61

Table Ap.4.33: Music therapist's video analysis figures during E's sessions, expressed as percentages

	Music therapist's codes during E's sessions								
Ses No.	PAV	PAO	PAP	PAC	PAS	PAPL	PAE	PAF	PAB
1	27.11	19.41	38.10	10.62	.37	5.49	3.66	.00	12.45
2	51.10	30.39	19.34	15.75	.83	13.81	5.80	3.87	12.43
3	29.83	18.23	39.50	13.81	.83	3.04	9.67	2.49	17.40
4	27.79	18.34	17.77	10.60	.00	2.29	16.91	1.15	26.93
5	46.80	19.43	17.00	9.49	.00	10.15	15.89	.88	19.21
6	45.41	18.90	36.75	5.77	.00	1.05	17.06	.79	11.81
7	55.69	16.03	22.45	.00	.58	11.37	23.62	.00	11.08
8	50.62	18.94	25.78	16.77	1.55	1.24	8.07	.62	13.66
9	62.17	19.06	24.63	8.80	1.76	.00	7.33	1.47	13.49
10	47.93	17.36	40.70	4.55	1.65	2.48	10.12	.62	16.32
11	42.14	31.16	20.77	.00	1.78	5.93	16.91	6.23	17.80
12	59.81	30.70	18.99	.00	1.58	3.48	8.54	3.16	16.14
13	59.46	24.32	24.32	.00	.77	3.09	3.86	1.93	14.67
14	36.90	26.55	25.52	.00	1.03	.00	10.00	6.55	28.62
15	40.82	34.25	16.16	9.59	1.10	2.74	9.59	2.74	17.53
16	45.02	30.24	14.78	16.15	1.03	6.87	11.34	1.72	16.49
17	34.25	22.47	33.97	12.05	1.92	3.29	7.40	6.85	12.60
18	41.74	26.67	19.13	6.96	2.03	.58	11.30	1.16	24.35
19	37.75	12.10	26.80	12.68	2.31	1.73	10.37	.86	29.68
20	30.27	16.02	18.40	10.09	.89	2.08	17.51	1.48	24.33

Table Ap.4.34: E's mother's video analysis figures, expressed as percentages

	E's mother's codes			
Session Number	PMAE	PMP	PMF	PMT
1	23.44	16.12	2.20	.00
2	11.88	5.25	1.66	.00
3	3.04	6.91	2.21	.28
4	17.77	.57	4.58	.00
5	16.78	.00	1.10	.22
6	20.21	.00	2.36	1.05
7	23.32	.00	.58	2.04
8	8.70	.00	14.60	.00
9	8.50	.00	6.74	.29
10	7.64	8.26	.62	.00
11	14.54	4.15	.30	.30
12	6.96	.00	13.29	.00
13	6.18	18.92	2.32	.77
14	6.55	.00	9.31	.00
15	5.21	.00	5.48	.00
16	11.34	.00	4.81	.34
17	4.11	4.38	2.19	.00
18	6.96	11.30	2.90	.29
19	8.65	.86	9.22	.00
20	13.06	8.01	1.19	.30

E's statistics

Table Ap.4.35

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
perc. A. vocalises	20	27.11	62.17	43.6301	10.79515
perc. A. plays other instruments	20	12.10	34.25	22.5284	6.28095
perc. A plays piano	20	14.78	40.70	25.0424	8.33866
perc. A. plays clarinet	20	.00	16.77	8.1841	5.78647
perc. A. moves playfully	20	.00	13.81	4.0362	3.84496
perc. A. blank	20	11.08	29.68	17.8513	5.83542
Valid N (listwise)	20				

Table Ap.4.36: Significance tests

E	Correlation Coefficient	Sig. (2 tailed)	Significance
pe	-.058	.721	NS
pex	-.203	.283	NS
pm	.074	.650	NS
pra	.084	.604	NS
prm	-.137	.399	NS
pim	-.242	.136	NS
pp	.106	.544	NS
pi	.179	.270	NS
pr	-.111	.495	NS
pte	-.406	.012	Sig. at .05 level
pti	.505	.002	Sig. at .01 level
pb	-.116	.475	NS
pmae	-.347	.032	Sig. at .05 level
pmp	.012	.946	NS
pmf	.116	.475	NS
pmt	.060	.728	NS

Appendix 4.9.7: R's video analysis codes, figures and statistics

Codes for R's video analysis

R.

e: engaged
ex: engaged with instrument
m: active music-making
mx: plays with help
im: interaction with Mum
v: vocalises
p: moves playfully
n: negative behaviour
s: sings song
os: out of shot
b: blank
- tb: total boxes

Music therapist / Mother

av: A. vocalises
ao: A. plays instrument
ap: A. plays piano
ac: A. plays clarinet
apl: A. moves playfully
af: A. follows
ae: A. attempts to engage
as: A. sings song
aos: A. out of shot
ab: A. blank
mae: M. attempts to engage
mp: M. plays

R's video-analysis tables

Table Ap.4.37: R's video analysis figures expressed as percentages.

Session Number	R's codes									
	PE	PEX	PM	PMX	PIM	PV	PP	PN	POS	PB
1	13.60	5.51	37.13	.37	6.25	22.06	1.84	.00	15.07	19.12
2	17.92	.36	34.41	.00	8.96	25.45	1.79	.00	12.90	18.64
3	39.45	2.34	21.48	.00	18.75	22.66	12.11	.00	5.47	11.33
4	20.00	2.22	32.89	.00	4.44	18.22	.89	3.11	18.67	16.89
5	22.80	.00	16.00	.40	6.40	18.00	.40	3.60	9.20	35.60
6	24.91	.75	42.26	.00	10.57	15.09	1.89	.75	3.02	24.91
7	25.84	.00	46.82	.00	2.25	13.11	4.87	1.12	6.37	17.98
8	21.56	2.23	50.93	.37	7.06	17.10	7.43	.37	6.32	14.50
9	33.60	2.40	30.80	.00	16.00	16.40	1.60	1.60	3.20	14.80
10	23.89	1.71	21.16	.00	3.75	19.11	6.14	7.85	12.29	23.21
11	22.84	2.47	33.95	1.85	2.78	11.73	.62	.00	4.01	29.94
12	28.03	1.04	38.41	.35	1.04	8.65	5.19	1.73	4.84	26.30
13	19.57	.00	40.94	.36	3.26	7.25	5.07	2.17	5.07	32.25
14	18.95	.79	38.16	.00	4.74	12.11	2.63	1.58	7.11	28.16
15	24.49	.00	39.59	.00	3.27	13.88	4.49	6.53	4.90	17.14
16	19.44	6.48	48.15	.00	2.31	22.22	3.24	.46	8.33	15.74
17	30.67	1.78	41.33	.00	6.22	8.00	4.00	1.33	5.33	19.11
18	26.96	6.96	40.43	.00	1.74	10.00	.43	10.43	1.74	14.35
19	25.72	3.62	25.72	.00	.00	11.59	1.09	7.97	6.52	27.54
20	23.37	2.41	23.02	.00	2.06	6.19	2.41	3.78	3.78	45.36
21	25.58	.00	24.71	.00	2.03	10.17	11.05	2.03	18.31	23.55
22	35.79	2.34	20.07	.00	5.02	18.06	3.68	.33	3.68	32.78
23	26.94	1.11	10.70	.00	5.17	19.19	2.95	1.48	2.95	40.96
24	32.14	2.50	13.93	.00	3.93	26.07	2.14	2.86	2.14	35.71
25	43.54	1.48	24.72	.00	5.17	15.87	1.11	1.85	1.11	28.78
26	21.05	1.40	15.79	.00	4.21	20.35	.35	4.91	4.91	43.51

Table Ap.4.38: R's playing bouts

Session number	Number of bouts	Average length of bouts	Longest bout
1	24	4.21	15
2	26	3.69	20
3	17	3.24	10
4	19	3.89	12
5	12	3.33	14
6	22	5.09	35
7	14	8.93	36
8	22	6.23	17
9	20	3.85	10
10	18	3.44	11
11	28	3.93	14
12	25	4.44	16
13	23	4.91	16
14	31	4.68	22
15	18	5.39	18
16	22	4.73	19
17	22	4.23	15
18	23	4.04	22
19	18	3.94	11
20	19	3.53	11
21	27	3.15	13
22	15	4.00	14
23	10	2.90	8
24	12	3.25	11
25	18	3.72	13
26	12	3.75	13

Table Ap.4.39: Music therapist's video analysis figures during R's sessions, expressed as percentages

	Music therapist's codes during R's sessions								
Session number	PAV	PAO	PAP	PAC	PAPL	PAF	PAE	PAS	PAB
1	70.59	7.72	40.07	11.40	16.91	.00	5.51	.37	8.46
2	74.19	19.00	24.01	7.53	9.32	.00	9.32	.00	9.32
3	63.67	16.41	26.17	14.06	19.53	.00	7.03	.00	8.20
4	53.33	25.33	26.22	8.44	7.11	.00	5.33	.89	16.44
5	71.20	13.60	22.40	.80	17.60	.00	8.80	.40	13.20
6	65.66	30.57	13.21	13.21	6.42	1.89	2.64	3.77	5.66
7	88.01	10.86	16.10	6.37	38.95	.00	3.37	1.50	4.49
8	79.93	38.66	17.47	9.67	10.04	2.23	3.35	.00	5.58
9	84.80	32.80	13.60	9.20	8.80	1.20	4.80	1.60	4.40
10	74.40	25.60	13.65	6.14	18.77	1.02	4.78	2.39	5.46
11	67.59	29.94	23.77	6.17	8.64	.31	5.56	3.09	6.79
12	82.01	27.68	35.29	1.04	12.11	1.73	4.15	4.84	3.81
13	82.97	40.58	28.99	2.90	11.96	.72	3.26	2.54	3.99
14	75.00	33.16	18.68	.00	18.16	1.05	6.05	3.16	10.79
15	77.96	35.10	37.55	.00	.00	1.63	6.12	2.86	5.31
16	87.04	31.02	24.07	1.39	15.28	4.17	9.26	5.09	6.48
17	85.78	19.56	28.00	7.56	12.44	4.89	8.00	4.00	3.56
18	73.04	40.00	13.91	3.48	15.65	7.39	8.26	6.96	12.61
19	68.48	23.19	9.42	3.62	8.33	2.54	12.68	3.26	15.22
20	65.98	37.46	16.15	16.84	11.34	1.03	5.50	3.09	8.93
21	61.92	27.03	11.63	13.37	22.09	1.45	4.07	1.74	11.34
22	78.60	24.08	21.40	14.05	18.06	1.34	4.68	3.68	6.35
23	72.32	14.76	31.00	9.23	13.28	.37	8.86	2.58	4.06
24	85.71	30.00	6.43	5.00	28.93	1.07	2.86	1.79	7.86
25	74.54	36.53	16.97	8.49	13.28	.37	4.43	3.69	5.17
26	76.14	19.65	30.18	5.61	8.42	2.46	9.47	2.81	8.07

Table Ap.4.40: R's mother's video analysis figures expressed as percentages.

	R's mother's codes	
Session Number	PMAE	PMP
1	2.57	2.94
2	2.51	6.09
3	1.17	9.77
4	6.67	5.33
5	2.80	5.20
6	2.26	4.15
7	1.87	4.12
8	.74	5.20
9	1.20	2.00
10	2.05	.68
11	1.85	4.01
12	2.42	2.08
13	1.09	1.81
14	1.05	4.47
15	1.22	5.31
16	.00	.00
17	.00	1.33
18	.00	.87
19	1.09	1.81
20	1.03	2.75
21	.58	1.16
22	.67	1.00
23	.74	1.48
24	.00	1.07
25	1.85	1.85
26	1.75	1.40

R's statistics

Table Ap.4.41:

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
perc.Am.vocalises	26	53.33	88.01	74.6488	8.66938
perc.Am.plays inst.	26	7.72	40.58	26.5492	9.25969
perc.Am.plays piano	26	6.43	40.07	21.7832	8.81082
perc.Am.plays clar.	26	.00	16.84	7.1367	4.76627
perc.Am.moves	26	.00	38.95	14.2859	7.73974
perc.Am blank	26	3.56	16.44	7.7513	3.60930
Valid N (listwise)	26				

Table Ap.4.42: Significance tests

R.	Correlation coefficient	Sig. (2 tailed)	Significance
Pe	.286	.040	Sig. at .05 level
Pex	.072	.611	NS
Pm	-.255	.067	NS
Pmx	-.310	.051	NS
Pv	-.175	.209	NS
Pp	-.108	.440	NS
Pn	.301	.032	Sig. at .05 level
Pnadj	.123	.413	NS
Pb	.372	.008	Sig. at .01 level
Pim	-.271	.052	NS
Pmae	-.479	.001	Sig. at .01 level
Pmp	-.475	.001	Sig. at .01 level
Av.l.bouts	-.175	.209	NS
L.bouts	-.174	.223	NS

Appendix 4.9.8: M's video analysis codes, figures and statistics

Codes for M's video analysis

M.

e: engaged
ex: engaged with instrument / chooses
m: active music-making
mx: plays with help
im: interaction with Mum
pc: physical contact with Mum
p: moves playfully
n: negative behaviour
s: sings song
os: out of shot
b: blank
- tb: total boxes

Music therapist / Mother

av: A. vocalises
ao: A. plays instrument
ap: A. plays piano
ac: A. plays clarinet
apl: A. moves playfully
af: A. follows
ae: A. attempts to engage
as: A. sings song
ab: A. blank or out of shot
mae: M. attempts to engage
mp: M. plays

M's video-analysis tables

Table Ap.4.43: M's video analysis figures expressed as percentages

Session Number	M's codes										
	PE	PEX	PM	PMX	PIM	PPC	PP	PN	PS	POS	PB
1	28.22	3.68	41.10	.00	3.07	.00	9.20	12.27	.00	12.27	4.91
2	19.88	4.22	56.02	.00	3.61	.00	7.23	4.82	.00	4.22	10.84
3	31.96	.00	47.47	.00	1.58	.00	12.34	1.90	1.27	8.54	12.34
4	36.18	.00	41.06	.00	3.66	.00	3.66	.81	.41	13.41	13.01
5	28.42	1.64	44.81	.00	4.92	.00	5.46	3.83	.00	2.19	19.67
6	31.60	.00	38.68	.00	8.96	.00	2.83	4.72	.00	2.83	16.04
7	30.66	.00	48.18	.00	4.38	.00	1.46	.73	.00	5.47	12.77
8	30.07	1.63	46.73	.00	3.59	.00	3.59	.00	.33	7.19	14.71
9	35.00	1.07	23.93	.00	6.07	6.07	3.57	1.43	.00	14.29	14.64
10	46.18	1.66	39.87	.00	3.99	.00	6.64	2.33	.33	1.66	8.64
11	40.78	1.96	39.61	4.31	2.75	.00	1.18	2.75	1.18	5.88	8.24
12	38.74	3.14	45.03	.00	3.14	4.71	1.57	4.19	1.05	2.09	8.38
13	37.85	.00	19.77	.00	1.69	18.64	.00	13.56	.00	2.26	19.21
14	54.17	.00	12.92	.00	2.50	5.42	.00	7.92	.00	21.67	8.75
15	38.43	1.85	31.02	.00	6.48	4.63	.46	20.83	.00	3.70	5.09
16	21.82	.73	12.00	.00	2.55	4.00	.00	36.36	.00	4.36	25.45
17	33.71	1.52	30.68	.00	4.17	21.97	2.27	9.85	.00	1.52	10.61
18	42.63	1.05	26.32	.00	2.63	.00	5.79	19.47	.00	2.63	12.11
19	20.91	.00	24.09	.00	.91	26.36	2.73	17.73	.00	12.27	5.91
20	41.25	2.92	21.25	.00	1.67	.42	2.92	11.67	.42	12.92	17.08
21	28.05	2.85	16.67	.00	.81	.00	1.63	12.20	.00	28.05	20.33
22	30.03	2.05	10.24	.00	1.71	26.28	4.78	13.99	.00	18.43	6.48

Table Ap.4.44: M's playing bouts

Session number	Number of bouts	Average length of bouts	Longest bout
1	16	4.19	14

2	19	4.89	16
3	21	7.14	25
4	14	7.21	16
5	17	4.82	15
6	17	4.82	24
7	26	5.08	12
8	28	5.11	22
9	23	2.91	8
10	26	4.62	16
11	22	4.59	27
12	12	7.17	19
13	12	2.92	6
14	12	2.58	6
15	21	3.19	8
16	11	3.00	10
17	20	4.05	15
18	19	2.63	9
19	13	4.08	13
20	18	2.83	10
21	12	3.42	5
22	11	2.73	8

Table Ap.4.45: Music therapist's video analysis figures during M's sessions, expressed as percentages

	Music therapist's codes during M's sessions								
Session number	PAV	PAO	PAP	PAC	PAPL	PAF	PAE	PAS	PAB
1	50.31	42.33	27.61	.00	1.84	1.23	25.15	.00	9.20
2	46.39	31.33	25.30	.00	.00	2.41	24.70	1.20	12.65
3	74.68	1.27	61.08	.00	.00	.95	13.92	2.85	4.43
4	61.38	39.02	28.86	8.13	1.63	.81	15.04	2.44	4.47
5	23.50	40.98	.00	.00	.00	7.65	14.75	2.19	3.83
6	58.02	17.92	36.32	.00	1.42	.00	22.64	4.72	8.96
7	54.01	33.58	26.28	.00	2.55	.00	21.17	1.82	12.77
8	44.77	20.26	35.62	13.40	.98	.98	15.36	1.63	13.73
9	49.64	19.29	24.64	15.71	4.64	.00	16.43	1.43	14.29
10	46.51	33.55	10.96	11.30	10.96	.33	21.59	1.33	9.30
11	35.69	27.84	23.53	.00	3.53	.00	31.37	2.35	10.20
12	59.69	15.71	54.97	.00	2.62	.00	15.71	1.05	8.90
13	57.06	38.42	18.64	.00	1.69	11.30	23.73	2.82	6.78
14	34.58	18.75	18.33	11.67	17.50	.00	17.50	.00	15.83
15	39.81	25.00	5.56	.00	13.43	.93	34.72	.00	14.81
16	42.91	28.36	14.91	.73	13.82	.00	25.82	.00	13.09
17	54.55	16.67	29.55	.00	31.06	3.41	9.47	.76	7.95
18	54.74	21.58	8.42	2.11	27.89	3.68	14.74	.00	12.11
19	66.36	26.82	35.00	9.09	20.91	.00	5.00	.91	4.09
20	60.00	36.25	10.83	13.75	25.00	1.25	16.25	.42	4.58
21	46.34	25.20	13.01	12.60	10.57	3.25	15.04	1.22	11.79
22	56.31	19.11	29.69	.00	25.26	.34	6.14	.34	4.78

Table Ap.4.46: M's mother's video analysis figures expressed as percentages

M's mother's codes

Session number	PMAE	PMP
1	11.04	1.84
2	6.63	.00
3	1.58	.32
4	1.22	.81
5	10.38	.00
6	12.26	.00
7	3.65	1.46
8	3.59	4.90
9	4.29	6.07
10	2.66	2.33
11	2.35	1.96
12	6.28	.52
13	9.04	1.13
14	4.58	2.08
15	9.26	10.19
16	17.82	.00
17	1.89	.00
18	5.79	.53
19	.45	.00
20	3.75	.00
21	4.88	.00
22	3.07	1.71

M’s statistics

Table Ap.4.47:

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
perc. Am. vocalises	22	23.50	74.68	50.7844	11.47520
perc. Am. plays inst.	22	1.27	42.33	26.3293	10.09356
perc. Am. plays piano	22	.00	61.08	24.5054	14.81639
perc. Am.plays clari	22	.00	15.71	4.4764	5.97972
perc. Am. moves	22	.00	31.06	9.8772	10.38597
perc. Am. blank	22	3.83	15.83	9.4794	3.93179
Valid N (listwise)	22				

Table Ap.48: M's Significance tests

M.	Correlation coefficient	Sig. (2 tailed)	Significance
Pe	.143	.352	NS
Pex	.082	.605	NS
Pm	-.619	.000	Sig. at .01 level
Pim	-.342	.026	Sig. at .05 level
Ppc	.446	.007	Sig. at .01 level
Pp	-.322	.037	Sig. at .05 level
Pn	.429	.005	Sig. at .01 level
Pb	.978	.22	NS
Pmae	-.091	.554	NS
Pmp	-.088	.582	NS
Av.l.bouts	-.460	.003	Sig. at .01 level
l.bouts	-.389	.013	Sig. at .05 level

Appendix 4.9.9: H's video analysis codes, figures and statistics

Codes for H's video-analysis

H.

e: engaged
ex: engaged with instrument
m: active music-making
mx: plays with help
v: vocalises
sm: smiles
im: interaction with Mum
r: rejects/resists
os: out of shot
b: blank
- tb: total boxes

Music therapist / Mother

av: A. vocalises
ao: A. plays instrument
ap: A. plays piano
ac: A. plays clarinet
apl: A. moves playfully
af: A. follows
ae: A. attempts to engage
as: A. sings song
ab: A. blank or out of shot
mae: M. attempts to engage
mp: M. plays
ms: M. sings
dae: D. attempts to engage
dp: D. plays
ds: D. sings

H's tables

Table: Ap.4.49: H's video analysis figures expressed as percentages

Session number	H's codes									
	PE	PEX	PM	PMX	PV	PSM	PIM	PR	POS	PB
1	25.63	.00	28.16	.00	1.81	2.17	1.08	3.25	9.39	29.24
2	25.00	1.16	26.16	.00	2.91	4.94	3.49	.58	2.91	37.79
3	17.12	6.16	44.18	.00	5.48	1.03	1.71	.68	2.74	23.29
4	16.03	1.69	27.85	.42	7.59	2.11	5.91	6.75	1.27	36.71
5	14.04	.43	44.68	.00	5.53	4.68	1.70	5.53	5.11	25.53
6	24.04	2.37	44.51	.00	7.12	9.50	3.56	1.78	7.42	11.57
7	18.96	5.20	48.33	.37	11.90	9.29	3.35	.74	2.97	17.47
8	12.72	1.78	63.91	.59	7.10	2.96	1.78	.89	3.25	13.31
9	16.47	2.10	58.68	.00	15.57	11.08	2.40	.00	2.69	11.68
10	15.99	1.70	48.64	.68	10.20	4.08		.00	6.12	16.67
11	14.29	2.44	42.51	.00	11.50	4.88	3.14	.35	1.05	30.31
12	12.43	.28	31.64	.28	6.50	5.08	3.95	.56	4.52	40.40
13	16.05	1.34	32.11	.00	10.03	3.34	3.34	.33	2.68	35.45
14	10.36	.00	28.29	.40	11.16	.80	3.19	.00	25.10	24.30
15	19.17	9.72	24.44	.00	15.56	3.61	4.17	1.94	1.94	28.61
16	20.38	5.33	42.95	.00	9.40	6.58	3.13	4.39	2.19	15.99
17	18.75	.28	30.11	.00	1.70	5.11	3.13	.28	5.97	40.34
18	14.60	1.65	31.96	.83	3.58	5.51	4.13	2.20	7.71	35.54
19	17.68	2.89	35.05	.96	4.50	4.82	2.57	.32	2.89	34.41
20	19.92	.00	31.03	.38	3.83	1.53	2.30	3.07	2.30	39.85
21	19.94	.29	56.89	.00	2.35	7.04	2.05	.00	5.57	20.23

In the 10th session the Pim (percentage engaged with mother) score is blank because H's father rather than his mother was present on that day.

Table: Ap.4.50: H's playing bouts

Session number	Number of bouts	Average length of bouts	Longest bout
1	36	2	8
2	43	2	11

3	48	3	9
4	32	2	5
5	39	3	9
6	34	4	15
7	36	4	11
8	44	5	35
9	37	5	31
10	28	5	17
11	25	5	30
12	29	4	15
13	23	4	17
14	19	4	16
15	32	3	12
16	38	4	16
17	41	3	17
18	37	3	26
19	26	4	22
20	20	4	30
21	22	9	56

Table Ap.4.51: Music therapist's video analysis figures during H's sessions expressed as percentages

	Music therapist's codes during H's sessions								
Session	PAV	PAO	PAP	PAC	PAPL	PAE	PAF	PAS	PAB

Number									
1	45.85	29.60	25.63	6.86	4.69	8.66	.00	2.53	13.36
2	72.38	36.63	24.71	.00	1.45	5.23	.29	1.16	8.72
3	70.21	33.22	23.29	.00	1.03	9.93	.00	.00	8.22
4	59.07	34.18	20.68	.00	.00	8.44	.00	.00	13.50
5	60.00	28.51	23.83	.00	2.98	10.64	.00	.00	8.09
6	55.79	45.99	10.09	11.28	2.37	8.61	1.48	1.48	8.31
7	49.44	27.88	25.65	7.06	2.97	8.92	.74	.37	7.81
8	55.62	18.93	45.27	12.13	.30	2.96	.00	2.66	1.18
9	52.99	27.25	36.83	3.59	3.59	7.19	2.40	.90	4.49
10	44.90	21.09	33.33	10.88	2.72	7.48	.34	1.02	6.80
11	64.46	18.47	37.28	6.97	3.48	5.23	.00	1.05	4.53
12	47.18	19.77	31.36	13.84	4.52	4.80	.00	1.13	6.21
13	51.84	18.39	44.15	11.04	1.00	2.68	.00	1.00	7.02
14	63.75	22.31	18.73	14.34	1.20	4.78	.00	.00	6.37
15	56.39	17.22	30.83	14.17	6.11	3.89	.00	.56	6.11
16	55.49	24.45	28.53	14.11	.63	5.02	.00	2.19	5.33
17	54.83	34.66	18.75	11.65	.57	9.38	.00	.57	7.39
18	55.37	23.97	17.91	10.74	.00	9.09	.00	.55	10.19
19	49.20	20.26	21.86	17.36	2.57	3.22	.64	.96	9.97
20	47.13	21.46	31.42	11.11	1.92	5.75	.00	.38	9.58
21	34.31	16.42	45.45	6.16	.88	5.28	2.35	1.17	7.92

Table Ap.4.52: H's mother and father's video-analysis expressed as percentages.

(H's father was only present in session 10)

	H's mother's/father's codes	
H's mother	PMP/PDP	PMS/PDS
1	1.44	.72
2	2.03	.00
3	2.40	.00
4	.84	.00
5	4.68	.85
6	4.15	.00
7	2.97	.37
8	.30	.59
9	1.50	.60
10 (H's father)	4.76	6.12
11	1.39	.00
12	3.39	.85
13	4.01	2.01
14	1.99	1.20
15	1.39	.83
16	1.25	1.25
17	1.14	.28
18	7.71	1.65
19	2.89	2.89
20	2.30	1.15
21	1.17	.88

H's statistics

Table Ap.4.53:

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
perc. A. vocalises	21	34.31	72.38	54.5800	8.82108
perc. A. plays instru.	21	16.42	45.99	25.7459	7.74480
perc. A. plays piano	21	10.09	45.45	28.3601	9.56992
perc. A. plays clari	21	.00	17.36	8.7282	5.40422
perc. A. moves playfully	21	.00	6.11	2.1422	1.68374
perc. A. blank or out of shot	21	1.18	13.50	7.6716	2.81704
Valid N (listwise)	21				

Table Ap.4.54: H's Significance tests

H.	Correlation coefficient	Sig. (2 tailed)	Significance
Pe	-.057	.712	NS
Pex	-.062	.694	NS
Pm	-.010	.952	NS
Pmx	.196	.253	NS
Pv	-.029	.856	NS
Psm	.133	.398	NS
Pim	.000	1.000	NS
Pr	.213	.182	NS
Pmae	.505	.002	Sig. at .01 level
Pmp	-.074	.650	NS
Pms	-.487	.003	Sig. at .01 level
Av.l.bouts	.248	.116	NS
l.bouts	.515	.001	Sig. at .01 level

Appendix 4.9.10: B's video analysis codes, figures and statistics

Codes for B's video analysis

B.

e: engaged
i: initiates
m: active music-making
p: moves playfully
v: vocalises spontaneously
ve: vocalises in an echolalic way
ts: talks spontaneously
te: talks in an echolalic way
ra: responds to A.
rm: responds to Mum
rd: responds to Dad
im: interaction with Mum
rd: interaction with Dad
pt: goes to toilet
os: out of shot
b: blank
- tb: total boxes

Music therapist / Mother / Father

av: A. vocalises
ao: A. plays instrument
ap: A. plays piano
ac: A. plays clarinet
apl: A. moves playfully
af: A. follows
ae: A. attempts to engage
as: A. sings song
aos: A. out of shot
ab: A. blank
mp: M. plays
mf: M. follows
mi: M. initiates
dp: D. plays
df: D. follows
di: D. initiates

B's tables

Table Ap.4.55: B's video analysis figures expressed as percentages (table a)

	B's codes							
Session number	PE	PI	PM	PP	PV	PVE	PTS	PTE
1	13.11	.82	73.77	3.69	3.69	.00	4.10	5.33
2	8.78	1.57	78.68	.00	1.25	.94	1.57	1.57
3	9.43	.63	66.04	.31	1.89	13.21	3.46	6.60
4	9.00	3.67	81.67	.00	1.33	4.00	3.33	.67
5	15.51	1.32	67.99	.33	1.98	3.96	3.30	1.98
6	14.33	1.72	73.07	1.43	1.43	12.03	1.43	1.43
7	6.33	4.75	72.78	8.23	6.96	.00	4.11	.63
8	12.41	2.92	68.25	.36	.36	.00	11.68	.00
9	15.66	3.21	71.08	.00	3.21	.80	11.65	.80
10	18.24	3.26	66.45	.65	.65	.00	15.31	.65
11	13.61	4.44	59.17	.30	9.17	.30	11.83	1.78
12	13.92	4.22	63.29	.00	8.86	.00	12.66	.84
13	7.58	2.27	74.24	.00	12.12	.76	15.53	.38
14	8.71	1.66	60.17	.00	12.03	2.90	15.77	.83
15	18.91	3.85	57.37	4.17	11.54	.32	8.33	.00
16	13.79	5.17	52.16	8.62	20.26	2.59	9.48	.00
17	15.05	8.15	50.78	4.39	15.36	.00	19.75	.00
18	18.96	3.72	52.79	4.09	9.29	.00	15.24	.00
19	29.65	4.65	40.41	6.98	10.76	.00	15.99	.00
20	24.32	3.55	26.23	4.37	3.01	.00	12.57	.00
21	30.99	5.11	50.48	7.67	6.39	.00	11.18	.00
22	24.43	4.58	47.71	12.60	6.49	.00	14.12	.00

Table Ap.4.56: B's video analysis figures expressed as percentages (table b)

	B's codes							
Session number	PRA	PRM	PRD	PIM	PID	PT	POS	PB
1	36.48	1.64		1.23		.82	9.84	34.43
2	24.76	3.45		1.88		.00	.94	9.72
3	12.26	2.83		1.89		.31	4.09	10.69
4	22.67	6.00		4.00		.00	1.33	6.00
5	13.20	7.59		4.62		.00	1.98	9.57
6	31.81	5.44		3.44		.57	1.43	7.74
7	17.41	4.11		4.11		.00	4.75	6.65
8	19.71	3.28		7.30		.73	4.74	8.76
9	19.68	2.01		4.02		.00	2.01	4.82
10	13.03	2.93		6.51		.00	4.56	4.89
11	14.79	1.78		3.25		.59	1.18	14.50
12	7.17	1.69		7.59		.42	1.27	11.39
13	10.61	.38		4.92		1.14	2.27	5.68
14	15.35	2.49		3.32		.83	2.07	19.09
15	15.38	1.28		3.53		1.60	9.29	7.37
16	14.22	.00		3.02		.43	7.33	8.19
17	11.60		1.25		3.45	.63	3.76	13.48
18	2.97		.00		.00	.00	6.69	7.06
19	7.85	.58		5.23		.58	2.03	11.34
20	2.46	.55		1.64		.00	9.02	29.78
21	11.18	3.19		4.79		.00	4.15	6.39
22	14.50	1.53	.76	6.11	12.60	.00	4.58	1.53

(In session 17 and 18, B's father was present instead of his mother. In session 22, they were both present.)

Table Ap.4.57: Music therapist's video analysis figures during B's sessions, expressed as percentages

	Music therapist's codes during B's sessions									
Session number	PAV	PAO	PAP	PAC	PAPL	PAE	PAF	PAS	PAOS	PAB
1	31.15	26.64	14.34	9.43	11.07	.82	1.23	11.89	.00	11.89
2	23.51	30.41	25.08	15.05	.94	7.84	.94	.63	.00	18.18
3	53.14	43.08	24.21	.00	2.20	13.84	.00	.31	.00	12.89
4	36.33	26.00	28.67	11.00	.67	9.33	2.33	2.33	.67	18.67
5	33.66	19.47	28.71	12.21	2.64	5.94	.33	.33	.33	19.14
6	36.96	31.81	19.20	19.48	1.43	7.74	.57	1.72	.29	15.47
7	41.46	14.87	38.92	15.19	2.85	7.28	3.48	1.90	.00	8.23
8	25.55	22.63	32.48	13.50	2.19	12.04	2.19	.73	.36	18.61
9	44.98	28.92	30.92	.00	.00	9.64	2.81	.80	.00	15.26
10	38.76	14.98	29.32	9.77	.33	16.29	1.95	.98	.00	14.98
11	35.21	26.92	27.81	8.28	1.48	18.05	1.48	.89	.00	13.31
12	48.10	18.57	24.05	13.50	.84	16.46	2.11	.84	.00	16.03
13	50.76	38.26	22.35	6.44	.00	10.23	.76	.76	.38	15.91
14	53.94	21.58	39.83	8.71	1.24	7.05	.41	.41	.00	8.71
15	52.56	31.09	23.40	6.73	2.24	10.90	3.85	.96	1.60	9.62
16	54.31	24.57	21.55	9.48	4.31	10.34	.86	1.29	.00	13.79
17	52.98	33.23	7.84	9.09	4.39	15.99	7.21	1.25	.00	13.17
18	48.33	15.61	25.28	7.81	1.12	21.93	1.49	.37	.37	14.87
19	45.06	11.92	17.73	18.02	2.62	14.83	.00	.29	.00	14.53
20	44.26	21.58	15.03	9.56	4.64	21.86	.82	.55	.27	17.49
21	39.62	16.29	36.74	13.10	.00	10.22	2.88	.96	1.28	9.90
22	48.85	20.99	20.23	7.63	.00	16.41	1.91	.76	.38	19.47

Table Ap.4.58: B's mother and father's video analysis expressed as percentages

	B's mother's/father's codes.					
Session Number	PMP	PMF	PMI	PDP	PDF	PDI
1	4.92	.00	2.46			
2	22.26	10.34	2.82			
3	10.38	.63	3.77			
4	21.00	2.67	4.33			
5	15.18	.99	8.91			
6	9.74	1.15	5.16			
7	12.97	1.27	5.70			
8	21.53	1.09	13.87			
9	14.86	1.61	8.84			
10	8.47	.33	12.38			
11	5.92	.30	7.69			
12	9.70	2.11	10.97			
13	4.92	2.27	5.68			
14	10.79	1.24	9.54			
15	11.22	1.60	5.77			
16	12.93	.00	9.48			
17				7.84	1.57	10.66
18				8.55	1.12	7.43
19	16.28	.29	12.79			
20	10.66	.00	12.84			
21	5.11	.32	8.63			
22	12.60	.00	10.31	14.50	.38	11.83

(In session 17 and 18, B's father was present instead of his mother. In session 22, they were both present.)

B's statistics

Table Ap.4.59:

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
perc. A. vocalises	22	23.51	54.31	42.7040	9.21634
perc. A. plays instr.	22	11.92	43.08	24.5191	8.03509
perc. A. plays piano	22	7.84	39.83	25.1681	7.97583
perc. A. plays clari.	22	.00	19.48	10.1820	4.81109
perc. A. moves playfully	22	.00	11.07	2.1453	2.45328
perc. A. blank	22	8.23	19.47	14.5515	3.38092
Valid N (listwise)	22				

Table Ap.4.60: Significance tests

B.	Correlation coefficient	Sig. (2 tailed)	Significange
Pe	.506	.001	Sig. at .01 level
Pi	.498	.001	Sig. at .01 level
Pm	-.714	.000	Sig. at .01 level
Pp	.394	.012	Sig. at .05 level
Pv	.377	.014	Sig. at .05 level
Pve	-.387	.018	Sig. at .01 level
Pts	.498	.001	Sig. at .01 level
Pte	-.646	.000	Sig. at .01 level
Pra	-.506	.001	Sig. at .01 level
Prm	-.474	.004	Sig. at .01 level
Pim	.232	.153	NS
Pb	-.019	.554	NS
Pmp	-.126	.436	NS
Pmf	-.278	.090	NS
Pmi	.495	.002	Sig. at .01 level

Appendix 4.10: The parents' PSI (Parent Stress Index) results

Table Ap.4.61: Results of the PSI profiles for W's mother

	Pre-treatment	Post-treatment

W's mother's PSI results	Scores	Percentiles	Scores	Percentiles
Hyperactivity	21	25	25	60
Adaptability	29	82	31	90
Reinforces parent	14	90	13	87
Demandingness	23	87	29	98
Mood	14	95	16	97
Acceptability	22	99+	21	99
Total child domain	123	91	135	97
Competence	30	60	31	65
Isolation	17	85	17	85
Attachment	13	65	13	65
Health	15	80	12	65
Role restriction	17	40	16	30
Depression	21	60	23	75
Spouse	19	70	18	65
Total parent domain	132	70	130	68
Total stress	255	82	265	88

Table Ap.4.62: Results of the PSI profiles for J's mother

J's mother's PSI results	Pre-treatment		Post-treatment	
	Scores	Percentiles	Scores	Percentiles
Hyperactivity	30	92	30	82
Adaptability	28	80	32	92
Reinforces parent	10	65	13	87
Demandingness	27	97	30	98
Mood	7	25	8	35
Acceptability	30	99+	26	99+
Total child domain	132	96	139	98
Competence	33	75	29	55
Isolation	9	15	9	15
Attachment	10	24	10	24
Health	11	50	11	50
Role restriction	20	65	17	40
Depression	18	35	14	12
Spouse	20	75	24	92
Total parent domain	121	50	114	39
Total stress	253	81	253	81

Table Ap.4.63: Results of the PSI profiles for Mi's mother

Mi's mother's PSI results	Pre-treatment		Post-treatment	
	Scores	Percentiles	Scores	Percentiles
Hyperactivity	30	87	40	99+

Adaptability	48	99+	51	99+
Reinforces parent	22	99+	24	99+
Demandingness	35	99+	40	99+
Mood	16	97	19	99+
Acceptability	32	99+	31	99+
Total child domain	183	99+	205	99+
Competence	24	25	33	75
Isolation	14	70	12	50
Attachment	13	65	14	75
Health	11	50	14	75
Role restriction	25	87	31	98
Depression	21	60	19	45
Spouse	27	97	25	94
Total parent domain	135	72	148	85
Total stress	318	98	353	99+

Table Ap.4.64: Results of the PSI profiles for 'I's mother

'I's mother's PSI results	Pre-treatment		Post-treatment	
	Scores	Percentiles	Scores	Percentiles
Hyperactivity	30	87	32	92
Adaptability	36	97	34	96
Reinforces parent	12	85	14	90
Demandingness	26	96	30	98
Mood	13	90	16	97
Acceptability	17	90	17	90
Total child domain	134	97	143	98
Competence	35	85	35	85
Isolation	13	60	12	50
Attachment	10	25	11	35
Health	13	70	13	70
Role restriction	24	85	21	70
Depression	26	85	23	75
Spouse	29	99+	27	97
Total parent domain	150	82	142	80
Total stress	284	93	285	93

Table Ap.4.65: Results of the PSI profiles for Ma's father

Ma's father's PSI results	Pre-treatment		Post-treatment	
	Scores	Percentiles	Scores	Percentiles
Hyperactivity	33	95	24	55
Adaptability	35	97	33	95

Reinforces parent	21	99+	15	95
Demandingness	25	95	22	85
Mood	16	97	13	90
Acceptability	18	95	18	95
Total child domain	148	99+	125	92
Competence	28	45	25	30
Isolation	9	15		
Attachment	10	25	21	98
Health	6	3		
Role restriction	12	10		
Depression	9	1		
Spouse	9	8		
Total parent domain	83	6		
Total stress	231	62		

(Blank scores mean that the questions were not answered.)

Table Ap.4.66: Results of the PSI profiles for E's mother

E's mother's PSI results	Pre-treatment		Post-treatment	
	Scores	Percentiles	Scores	Percentiles
Hyperactivity	36	99	35	98
Adaptability	34	96	42	99+
Reinforces parent	16	96	10	65
Demandingness	32	99+	28	97
Mood	16	97	16	97
Acceptability	19	96	18	95
Total child domain	153	99+	149	99+
Competence	36	87	32	70
Isolation	13	60	13	60
Attachment	10	25	15	80
Health	12	65	14	75
Role restriction	28	94	28	94
Depression	23	75	19	45
Spouse	22	85	20	75
Total parent domain	144	82	141	79
Total stress	297	97	290	94

Table Ap.4.67: Results of the PSI profiles for R's mother

R's mother's PSI results	Pre-treatment		Post-treatment	
	Scores	Percentiles	Scores	Percentiles
Hyperactivity	38	99+	27	75
Adaptability	34	96	30	85
Reinforces parent	16	96	10	65

Demandingness	31	99	28	97
Mood	11	75	11	75
Acceptability	22	99+	18	95
Total child domain	152	99+	124	91
Competence	31	65	27	40
Isolation	20	95	19	90
Attachment	16	85	13	65
Health	15	80	13	70
Role restriction	24	85	17	40
Depression	31	96	25	82
Spouse	25	92	20	75
Total parent domain	162	93	134	72
Total stress	314	98	258	85

Table Ap.4.68: Results of the PSI profiles for M's mother

M's mother's PSI results	Pre-treatment		Post-treatment	
	Scores	Percentiles	Scores	Percentiles
Hyperactivity	34	96	20	20
Adaptability	44	99+	35	97
Reinforces parent	8	45	7	30
Demandingness	29	98	25	95
Mood	12	85	8	35
Acceptability	20	98	17	90
Total child domain	147	99+	112	76
Competence	24	25	24	25
Isolation	14	70	15	75
Attachment	10	25	9	15
Health	18	92	11	50
Role restriction	23	80	18	45
Depression	15	15	16	20
Spouse	16	50	17	55
Total parent domain	120	49	110	30
Total stress	267	90	222	50

Table Ap.4.69: Results of the PSI profiles for H's mother

H's mother's PSI results	Pre-treatment		Post-treatment	
	Scores	Percentiles	Scores	Percentiles
Hyperactivity	28	80	29	85
Adaptability	24	50	34	96
Reinforces parent	16	94	15	95
Demandingness	34	99+	31	99

Mood	12	85	16	97
Acceptability	23	99+	25	99+
Total child domain	137	97	150	99+
Competence	38	91	39	94
Isolation	25	99+	23	99+
Attachment	10	25	9	15
Health	24	99+	14	75
Role restriction	28	94	31	98
Depression	31	96	32	96
Spouse	26	95	25	25
Total parent domain	182	97	173	96
Total stress	319	98	323	99+

Table Ap.4.70: Results of the PSI profiles for B's mother

B's mother's PSI results	Pre-treatment		Post-treatment	
	Scores	Percentiles	Scores	Percentiles
Hyperactivity	29	85	29	85
Adaptability	27	70	28	80
Reinforces parent	14	90	16	95
Demandingness	26	95	24	90
Mood	10	60	10	60
Acceptability	20	98	17	90
Total child domain	126	93	124	90
Competence	22	15	20	10
Isolation	12	50	15	75
Attachment	9	15	9	15
Health	13	70	13	70
Role restriction	21	70	21	70
Depression	12	5	9	5
Spouse	17	55	18	65
Total parent domain	106	24	105	23
Total stress	232	63	229	61

Chapter 5

Appendix 5.1: Croft Information sheet for Parents

Information sheet for the Music Therapy Diagnostic Assessments Research Project

We are inviting you to take part in our study of the Music Therapy Diagnostic Assessments at the Croft Unit for Child and Family Psychiatry.

We want to look at how useful the Music Therapy Diagnostic Assessments are to help us to understand your child's strengths and weaknesses. In these half-hour assessments a qualified music therapist will invite your child to play a variety of simple percussion and wind instruments.

We will then compare the Music Therapy Diagnostic Assessments with the ADOS test which your child will have while he or she is at the Croft. ADOS stands for Autistic Diagnostic Observation Schedule and is administered by one of our psychiatrists on the unit. Your child will be invited to take part in several playful tasks such as turn-taking games, describing cartoons, puzzles or pretend play. The test lasts approximately half an hour.

After the music therapy assessment sessions and the ADOS your child will have a short interview with the research assistant to find out what your child thought about the tests.

We will videotape all the sessions and the interviews. We can then look at the videos to describe what has happened.

This project will not make any difference to the treatment of your child, although it will help us to describe more clearly how he or she responds to the assessment sessions. The main benefit of the study is to help us to learn more about how useful Music Therapy Assessment sessions are and how to improve them.

All the personal information collected will remain confidential to the study team. Reports of the research will not identify individuals. All the videotapes will be erased after the study is complete.
You are free to make your own decision about taking part in this study. Your decision will not affect the treatment you receive. You may choose to withdraw from the study at any time without giving a reason. You will be asked to sign a

consent form if you agree to participate.

If you have any concerns about the study you could consult Dr Holmes at the Croft Unit for Child and Family Psychiatry, (tel: 01223 885800).

Further information may be obtained from Amelia Oldfield, Music Therapist at the Croft.

Amelia Oldfield
Malcolm Adams
Music Therapist
Clinical Psychologist

Appendix 5.2: Croft Project consent form for parents

Cambridge and Huntingdon Health Authority

Consent by Legal guardian of a Minor to the participation by the minor in a research study.

Music Therapy Diagnostic Assessments Research Project

I
(name) …….

of
(address) …….

……..

being the legal guardian of ……

of age ……. (subsequently referred to as child) hereby give my permissions fully and freely for the child to participate in this research project.

I understand that the project is designed to improve knowledge about Music Therapy Diagnostic Assessments. I note that I may withdraw my consent at any stage in the investigation and I acknowledge that the purpose and nature of the study have been explained to me by:……...

And that I had an opportunity to discuss these matters with him/her.

I have received a written explanation of these matters.

Signed ……

Date ……..

Witness to signature of participant/guardian and to the fact that he/she has read the document and freely given his/her consent.

Signed ……...

Date ……..

(Witness **must not** be a member of project team)
I confirm that I have explained to the participant/guardian the nature of the study.

Signed ……..

Date ……..

(Member of project team)

Place ……..

Communication

1) Stereotyped / Idiosyncratic Use of Words or Phrases score…….
2) Reporting of Events score…….
3) Conversation score…….
4) Descriptive, Conventional, Instrumental Gestures score…….
(Autism cut-off = 3; Autism spectrum cut-off = 2 Total score…….

Communication and qualitative impairments in reciprocal social interaction

5) Unusual eye contact score…….
6) Facial expression directed to others score…….
7) Insight score…….
8) Quality of social overtures score…….
9) Quality of social response score…….
10) Amount of reciprocal social Communication score…….
11) Overall quality of rapport score…….
(Autism cut-off = 6; Autism spectrum cut-off = 4) Total score……

Communication + Social
(Autism cut-off = 10; Autism spectrum cut-off = 7) TOTAL Score…..

In addition to these categories, five other areas are coded which relate to autistic spectrum disorders but are not considered to be crucial factors contributing to a diagnoses.

Imagination and creativity

12) Imagination and creativity score……

Stereotyped behaviours and restricted interest

13) Unusual sensory interest in play material/person score……
14) Hand and finger and other complex mannerisms score……
15) Excessive interest in highly specific topics or objects score……
16) Compulsions or rituals score……

Appendix 5.8: Scoring of Music Therapy Diagnostic Assessment

Score in the following way: 0 = None of this behaviour was noted
1 = Some of this behaviour was noticed
2 = A lot of this behaviour was noticed

NB: Only score if you are certain you noticed some of the behaviour. If in any doubt do not score.

Autism Spectrum Disorder categories:

Child's playing seems to be independent of therapist's playing. Therapist has to work hard to 'remain' with child and child often seems to be doing his/her own thing.

Score:……

Child is not facially or physically engaged in playing process, or unusual eye contact (too little or too much).

Score…….

Child doesn't make *any* spontaneous suggestions (musical or verbal) with communicative intent / or story is excessively simple showing inability to be creative or imaginative (this should not be caused by a general learning disability, but appear untypical of the child's overall ability)

Score…….

Child is unusually interested in structure of instruments / lines instruments or beaters up / 'twiddles' with beaters or shakers / uses beaters in unexpected ways e.g. puts them in holes, sticks them on head.…

Score…….

Child becomes self absorbed and difficult to distract from certain instruments such as the wind chimes or the ocean drum. (Not boredom or distractability but

a more isolated, engrossed type of playing, with possible repetitive playing)
Score…….

f) Child's tone of voice/intonation has an unusual or repetitive quality.
Score…….

Child is unable / unwilling to make up a story where we both contribute to the story line. Child may be unwilling to make up a new story rather than telling a well-known story, or child may refuse to allow the therapist to contribute in any way.
Score…….

Child develops obsessive/repetitive types of playing or obsessive repetitive patterns in story.
Score…….

Child is unable to have more than one / immediate copying response. The exchanges don't develop into a dialogue.
Score…….

Child is unable to have any playful or humorous exchange with the therapist.
Score…….

Child wants entire session to be on his/her terms and can't accept any ideas or suggestions from the therapist. (Not in a calculated manipulative way but rather in an 'own world' way.)
Score……

Child does not show a response to therapist's singing. No embarrassment or smile or communicative response. (Do not score if child is choosing to reject or ignore the therapist and showing a negative response.)
Score……

Total:……

Attention Deficit Disorder

Child has difficulties remaining engaged in any one activity for more than a few minutes.
Score……

Child is very distractible and fiddles with beaters or knobs on percussion Instruments / child has difficulty remaining in one place / child fidgets.
Score……

Total:……..

Emotional Difficulties

Child is very anxious / or child finds it difficult making own choices / child seems to lack a sense of self.

Score……

Child has difficulties moving from one activity to another / child has difficulties coming to the session or leaving the session.

Score……

Child seems to need to be in control of session and therapist in a 'powerful' way rather than in order to be reassured about the session.

Score……

Child is defiant and seems to want to draw therapist into a conflict.

Score……

Child is impulsive and unpredictable.

Score……

Total:……

Language / learning disabilities

Child is difficult to understand / has pronunciation difficulties / speaks in an ungrammatical way, (more so than age of child would lead you to expect).

Score…….

Child speaks very little or not at all / or child seems very anxious about speaking. (Do not score when therapist feels child is making a point of not speaking but only if it is felt that child has real difficulties in this area.)

Score……

Child has difficulties understanding the therapist.

Score……

w) Child is clumsy or awkward/unco-ordinated.

Score……

Total:……

Cut off points: Autism: 10
Autism Spectrum: 6
Emotional / Behaviour difficulties: 5

Appendix 5.9: Questionnaires for tester

Questionnaire for person carrying out assessments – Music Therapy Diagnostic Assessments or ADOS Tests (to be filled in straight after test)

Name of Child:

Name of tester:

Date:

1 Was Test an effective tool?
Answer this question for each activity presented to child.
Score in the following way: a) very effective; b) effective; c) not very informative; d) useless.

Activity 1:
Title:……
Score….
Activity 2:
Title:……
Score….
Activity 3:
Title:……
Score….
Activity 4:
Title:……
Score….
Activity 5:
Title:……
Score….
Activity 6:
Title:……
Score….

Activity 7:
Title:……
Score….
Activity 8:
Title:……
Score….

Activity 9:
Title:……
Score….
Activity 10:
Title:……
Score….
Activity 11:
Title:……
Score….
Activity 12:
Title:……
Score….

2. Did person carrying out test feel that they administered the test well?
(answer Yes or No and comment.)
Yes No
Comments:

3. What were the limitations of the test?
(immediate reactions)
Comments:

4. Particular immediate impressions of child- e.g. what stood out?
Comments:

5. Reactions of research assistant regarding whether child behaved in an expected or unexpected way during the session. (Only relevant to Music Therapy Diagnostic Assessments)
Circle one: expected way slightly unexpected way very unexpected way
Comments:

Appendix 5.10: Guidelines for children's structured interviews

This Interview aims to give us information about:

How the children perceive the MT diagnostic procedure and the ADOS
Whether the tests interest and engage the children
How children experience being with another adult/ reciprocity/ ability to empathise
We may find that some of the questions asked in this structured interview should be incorporated into the MT diagnostic procedure and/or the ADOS

Motivation/interest

Choose the strand of the question which relates to the appropriate assessment (i.e.: Music Therapy or ADOS.

What did you like best / what was your worst thing?
Have you ever done any of these games / played any instruments or done any singing before?

Experience of being with another adult

Was it like other games you've played before with your family, or a friend/ like playing instruments or singing at school/ with a teacher/ with a friend?
Did you like taking turns?
Did you like choosing?……or did you prefer Jo or Amelia choosing?
Was it fun being with Jo / Amelia?
Did you like it better when you were playing alone?

Self-esteem/confidence

You're quite good at doing puzzles; building towers/ playing the drum; singing…..is it fun?
It's a good feeling being good at things….do you do these things at home/school with family/friends?

Explore an obvious area of difficulty in a positive way. e.g. it was hard thinking of ideas for the story…. But you had a good idea at the end. Sometimes it takes time to think of things….. I'm shy about singing too….but I like singing in the bath……

Perception of other person's feelings:

What did you think Jo/Amelia liked best?
Did they seem to enjoy themselves?
Perhaps you both had fun together….
Appendix 5.11:

Table Ap.5.2: Music therapist's MTDA adjusted scores, main ADOS scores and diagnosis.

Child	MTDA adj cut off: Aut: 9 ASD: 5.5	ADOS cut off: Aut:10 ASD:7	Croft Diagnosis on Discharge	Diagnosis (numerical) 0 = no ASD 1 = Borderline 2 = ASD
C1	3.5	6	Atypical Autism	1
C2	5.5	6	No ASD	0
C3	3.5	12	ASD	2
C4	4.5	9	Asp. Syndrome	2
C5	6	4	"Difficulties overlap with ASD at milder end"	1
C6	1	3	No ASD	0
C7	5	4	"Development consistent with ASD – atypical in his highly developed immagination"	1
C8a	3	1	No ASD	0
C9s	5.5	8	PDD.nos	1
C10s	3.5	9	PDD.nos	1
C11s	4	9	PDD.nos	1
C12	6.5	NS	"No ADOS, ADI indicated PDD"	2
C13	7.5	2	No PDD	0
C14	6	7	Asp. Syndrome	2
C15a	2.5	1	No ASD	0
C16	6.5	14	PDD	2
C17	7	12	Asp.Syndrome	2
C18	12	8	"High functionning ASD"	1
C19	2.5	11	No ASD	0
C20a	3.5	4	"Closest category would probably be PDD.nos"	1
C21	5	6	PDD.nos	1
C22	3	2	PDD.nos	1

C23	4.5	4	No ASD	0
C24	5	3	PDD.nos	1
C25	6	8	PDD.nos	1
C26	7	10	"High functioning autism with atypical presentation"	2
C27	5.5	12	PDD.nos	1
C28	9	14	Childhood autism	2
C29	2.5	7	PDD.nos	1
C30a	6	7	Borderline ASD	1

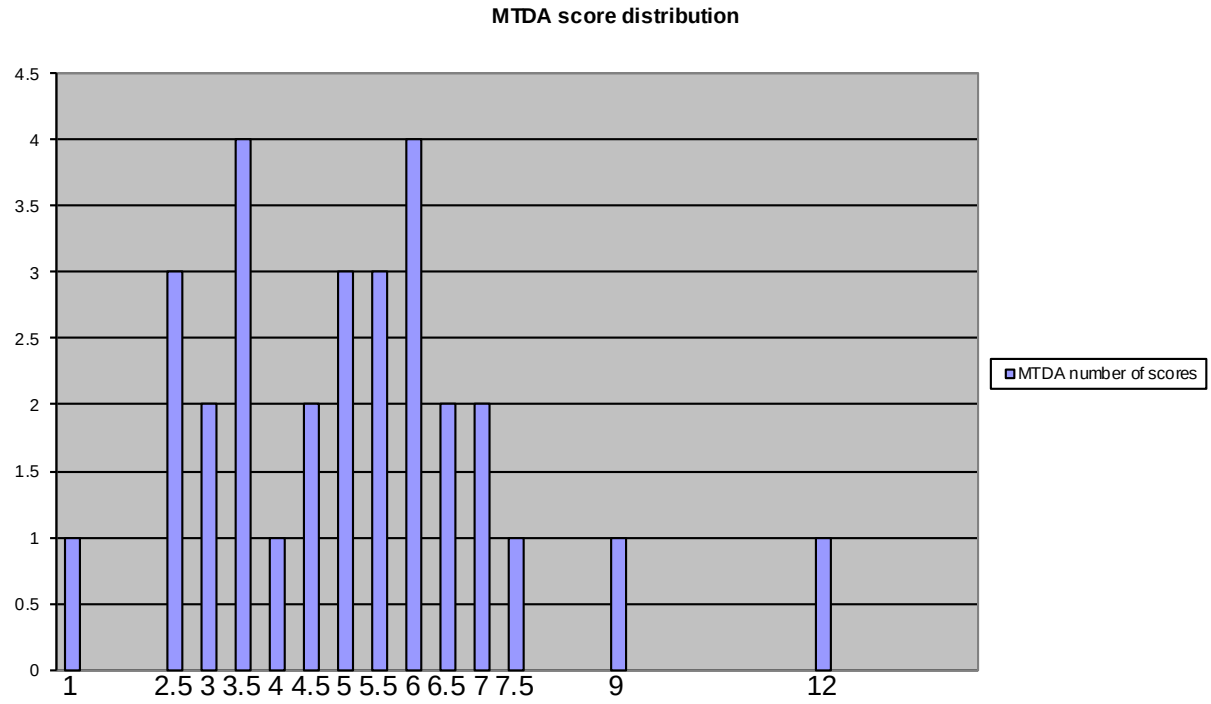
In this table the MTDA scores were adjusted because the MTDA had 12 questions and the main ADOS had 11 questions. To compare the two sets of figures, MTDA scores were divided by 12 and multiplied by 11. Figures were rounded up to nearest 0.5 point.

The last column translates the Croft Diagnoses into numerical form. In consultation with the psychiatrist, Jo Holmes, it was decided that the children with PDD. nos (Pervasive Developmental Disorder of a non specific type) diagnoses as well as some of the children with described diagnoses rather than clear 'labels' would be grouped together as borderline children. I discussed each of the possible 'borderline' children with Jo Holmes before deciding whether to fit them into the 'borderline' (1) category or the ASD (2) category.

NS: (for C12s ADOS) indicates that it was not possible to score this test for this child.

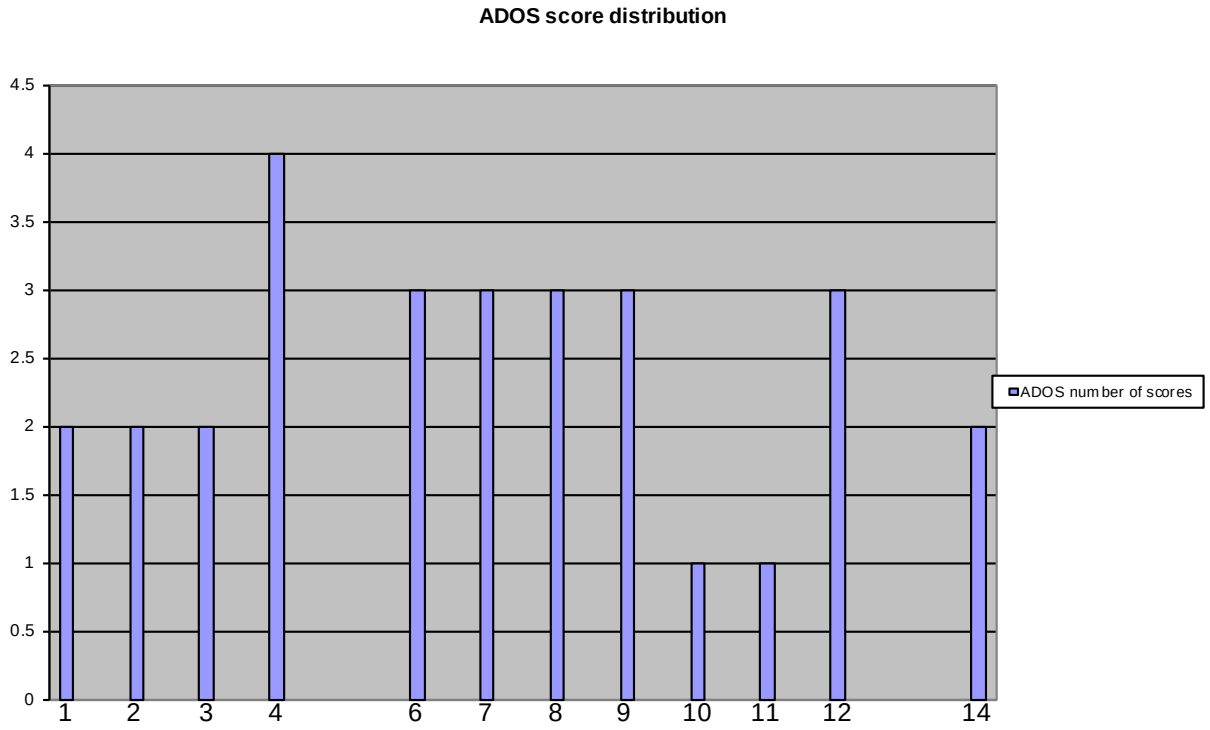
Appendix 5.12

Chart Ap.5.1: MTDA distribution of scores



Appendix 5.13

Chart Ap.5.2: ADOS distribution of scores



Appendix 5.14

Table Ap.5.3: SPSS descriptive statistics on the MTDA and ADOS figures relating to the different Croft diagnoses

MTDA

Diagnoses (Croft)	No ASD (0)	Borderline (1)	ASD (2)
Numbers	7	15	8
Mean	3.79	5.07	6.25
Std. Deviation	2.20	2.24	1.67

ADOS

Diagnoses (Croft)	No ASD (0)	Borderline (1)	ASD (2)
Numbers	7	15	7
Mean	4.00	6.47	11.14
Std. Deviation	3.56	2.70	2.61

Appendix 5.15

Table Ap.5.4: Kruskal-Wallis Test on the ability of the MTDA and the ADOS to distinguish between the different Croft Diagnoses

Test Statistics[a,b]

	MTDAADJ	ADOS
Chi-Square	6.722	12.756
df	2	2
Asymp. Sig.	.035	.002

a. Kruskal Wallis Test

b. Grouping Variable: DIAG2

Appendix 5.16

Table Ap.5.5 Agreement / disagreement between diagnoses

Child	MTDA adj cut off: Aut: 9 ASD: 5.5		ADOS cut off: Aut: 10 ASD: 7		Croft Diagnosis (numerical) 0 = no ASD 1 = Borderline 2 = ASD	MTDA Diag. Agr.	ADOS Diag. Agr.	MTDA ADOS Agr.	3 Diag Agr.	MTDA *or* ADOS Agr.
C1	3.5	0	6	0/1	1	No	Yes	Yes	No	Yes
C2	5.5	2/1	6	0/1	0	No	Yes	Yes	No	Yes
C3	3.5	0	12	2	2	No	Yes	No	No	Yes
C4	4.5	0/1	9	2	2	No	Yes	No	No	Yes
C5	6	2/1	4	0	1	Yes	No	No	No	Yes
C6	1	0	3	0	0	Yes	Yes	Yes	Yes	Yes
C7	5	0/1	4	0	1	Yes	No	Yes	No	Yes
C8a	3	0	1	0	0	Yes	Yes	Yes	Yes	Yes
C9s	5.5	2/1	8	2/1	1	Yes	Yes	Yes	Yes	Yes
C10s	3.5	0	9	2	1	No	No	No	No	No
C11s	4	0	9	2	1	No	No	No	No	No
C12	6.5	2/1	NS		2	Yes				
C13	7.5	2	2	0	0	No	Yes	No	No	Yes
C14	6	2/1	7	2/1	2	Yes	Yes	Yes	Yes	Yes
C15a	2.5	0	1	0	0	Yes	Yes	Yes	Yes	Yes
C16	6.5	2/1	14	2	2	Yes	Yes	Yes	Yes	Yes
C17	7	2	12	2	2	Yes	Yes	Yes	Yes	Yes
C18	12	2	8	2/1	2	Yes	Yes	Yes	Yes	Yes
C19	2.5	0	11	2	0	Yes	No	No	No	Yes
C20a	3.5	0	4	0	1	No	No	Yes	No	No
C21	5	0/1	6	0/1	1	Yes	Yes	Yes	Yes	Yes
C22	3	0	2	0	1	No	No	Yes	No	No
C23	4.5	0/1	4	0	0	Yes	Yes	Yes	Yes	Yes
C24	5	0/1	3	0	1	Yes	No	Yes	No	Yes
C25	6	2/1	8	2/1	1	Yes	Yes	Yes	Yes	Yes
C26	7	2	10	2	1	No	No	Yes	No	No
C27	5.5	2/1	12	2	1	Yes	No	Yes	No	Yes
C28	9	2	14	2	2	Yes	Yes	Yes	Yes	Yes
C29	2.5	0	7	2/1	1	No	Yes	No	No	Yes
C30a	6	2/1	7	2/1	1	Yes	Yes	Yes	Yes	Yes

The cut off points (5.5 for the MTDA and 7 for the ADOS) were used to determine whether or not the diagnoses matched up to the Croft numerical diagnoses of '0' for 'no ASD' and '2' for 'ASD'. For the Croft 'borderline' score of '1', I decided (again in

consultation with Jo Holmes) that agreement would be reached if the MTDA or the ADOS score was either one more, the same or one less than the cut off points for ASD (that is 4.5 to 6.5 for the MTDA and 6 to 8 for the ADOS). The number next to each of the MTDA and ADOS scores is the numerical translation of 'no ASD' (= 0), 'Borderline' (=1) and 'ASD' (=2).

'MTDA Diag. Agr.' refers to whether or not the MTDA results match up with the numerical version of the Croft diagnoses.

'ADOS Diag. Agr.' refers to whether or not the ADOS results match up with the numerical version of the Croft diagnoses.

The last column refers to whether or not all three diagnoses (MTDA, ADOS and Croft) match up.

Appendix 5.17

Table Ap.5.6: Summary of general statistics on the MTDA and ADOS scores

	Number of children	Mean	Std. Deviation
MTDA	30	5.08	2.21
ADOS	29	7.00	3.81

Appendix 5.18

Table Ap.5.7: Wilcoxon Signed Ranks Test for MTDA and ADOS scores

Test Statistics[b]

	ADOS - MTDAADJ
Z	-2.512[a]
Asymp. Sig. (2-tailed)	.012

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Appendix 5.19: Sub-tests of individual questions in ADOS and MTDA

N.B. in the sub-tests in Appendix 5.19, I compared all the children's scores from a specific question in the ADOS test to all the children's scores from a specific question in the MTDA test. When two or more questions from either the ADOS or the MTDA were being used as a point of comparison, I used the computing program in SPSS to work out a list of average scores so that the two sets of questions could be compared.

In the two cases where there was a significant difference between the scores (ADOS question 8 with MTDA question k; and ADOS and MTDA questions about ritualistic behaviour), I also used the SPSS programme to work out descriptive statistics (means and standard deviations).

Table Ap.5.8: Significance tests for individual or groups of similar **questions within the ADOS and the MTDA test scores**

Questions compared	Z	Asymp. Sig (2 – tailed)	Significance

ADOS 1 (A4) MTDA f + h / 2	-.600 (a)	.549	NS
ADOS 3 (A8) MTDA c	-.765 (a)	.445	NS
ADOS 4 (A9) MTDA b	-1.824 (a)	.068	NS
ADOS 8 (B7) MTDA k	-2.892 (a)	.004	Sig. at .01 level
ADOS 9 (B8) MTDA g + j + l / 3	-1.050 (a)	.294	NS
ADOS 10 (B9) MTDA I	-1.048 (a)	.295	NS
ADOS 11 (B10) MTDA a	-1.004 (a)	.315	NS
ADOS 12 (C1) MTDA c	-.157 (a)	.875	NS
ADOS 13 + 14 + 15 + 16 / 4 (D1 D2 D4 D5) MTDA d + e + h / 3	-2.983 (a)	.003	Sig. at .01 level

a. Based on negative ranks
b. Wilcoxon signed ranks test

Table Ap.5.9: Descriptive statistics for the two groups of questions **showing significant differences in scores**

Questions compared	Number of children	Mean	Standard Deviation
ADOS 8	29	.586	.68
MTDA k	30	.18	.38
ADOS 13 + 14 + 15 + 16 / 4	27	.10	.22
MTDA d + e + h / 3	30	.39	.35

Appendix 5.20: Testers questionnaires

Table Ap.5.10 MTDA Testers questionnaires

Child	Hel	Ch	lp.p	w.c	Ims	v.p	Smp	Sh.i	Kz	p.di	i.di	Elc	tch	b.b	t.a.	mean
C1	3	3		4	4	4	3	3	4					3	8	3.44
C2	3	4	4				4				4			3	5	3.66
C3	3	3	4		4	4		4				3		3	8	3.5
C4	3	3	4		4		4		4		3	3		3	9	3.44
C5	3	3	4		4					3	3		4	3	8	3.37
C6	3				4					4	3	4-3	4	3	8	3.5
C7	3	3	4	4	4							4	4	3	8	3.62
C8a	3	3	4	4			4			4	3-3		4	4	10	3.6
C9s	4	4		4	4			3			3	3		4	8	3.62
C10s	3	3	4	4	4		4	4		4	4			3	10	3.7
C11s	3	3	4	3			4		4	4	4			4	9	3.66
C12	3	3	4			4	4	4		4		3		4	9	3.66
C13	3	4	4		4		3-3			4	3			2	8	3.33
C14	4	3	3	4	4		2	4			3	3	4	3	11	3.36
C15a	3	3	4	4			4	2			3		4	3	9	3.33
C16	2		2								3			2	4	2.25
C17	4	3	4		4	4	4				4			4	8	3.87
C18	4	4	4	4	4	3				4	3	3		4	10	3.7
C19	4	3	4		4		2				4-4		4	3	9	3.55
C20a	4	3	4				3-3	4						3	7	3.42
C21	4	2	4	3	4			3	4			3		3	9	3.33
C22	4	3	4		4		3-3		4		4			3	9	3.55
C23	4	4		4	4	3	3			3	3			2	9	3.33
C24	3	3	4			3				4	4	3		3	8	3.37
C25	3	3	3-4	4	4	3			4				4	3	10	3.5
C26	3	3	4	3			3-3				3-4			3	9	3.22
C27	2	3				2	2	3-3	2		4-3	4		2	11	2.72
C28	3	3-3					2	2			3				6	2.66
C29	4	3	4	3					4		3	3	4	3	9	3.4
C30a	3	3	4	4			3				3		4	3	8	3.37
Total	98	91	96	56	68	30	73	39	30	38	91	42	40	89		
Tot.us	30	29	25	15	17	9	23	12	8	10	27	13	10	29		
Mean	3.26	3.13	3.84	3.73	4	3.33	3.17	3.25	3.75	3.8	3.37	3.23	4	3.06		

The codes at the top of the table refer to the following activities:
Hello song (hel)
Act of choosing (here I evaluate how the child chooses and reacts to being asked to take it in turns to choose, rather than what he/she chooses) (ch)
Child on large percussion, music therapist at piano (lp.p)

Child on wind instrument, music therapist on clarinet (this could involve moving around room (w.c)
Improvised story (ims)
Child on violin, music therapist at piano (v.p)
Child and music therapist play small percussion on floor together (smp)
Child and music therapist share an instrument such as the bass xylophone or the autoharp (sh.i)
Kazoo dialogue (kz)
Piano dialogue (p.di)
Child and music therapist play an instrument each, sitting on chairs (i.di)
Child plays electric organ or another instrument and music therapist listens (elc)
Music therapist teaches child a tune (usually on piano or xylophone) (tea)
Goodbye on bongos (b.b)

When two figures appear in a box, it means that a child has chosen to do that activity (or an activity very similar to that activity) twice.

C28 was very difficult to score as he refused to co-operate in any way with any suggestions made.
'ch' refers to the act of choosing rather than to an activity itself but is part of the integral structure of the MTDA.

'Tot. us' in the penultimate line refers to the number of times a particular activity was used across all the children.

't.a' in penultimate column refers to total amount of activities used in session.

(Appendix 5.20 continued)

Table Ap.5.11 ADOS Testers questionnaires

Child	C.t	Mbp	Jip	D.t	Des	St.b	Cart	Conv	Em	S.d	Br	f.l.m	Cr.s	Mean
C1	3	3	3	3	2	3	2	3	3	3	2	3	3	2.76
C2	3	4	3	4	2	3	2	3	4	4	2	4	3	3.15
C3	3	4	4	3	3	2	2	3	4	3	3	4	3	3.15
C4	3	3	3	3	2	3	3	3	4	4	2	4	3	3.07
C5	1	2	1	1	1	1	1	1	1	1	1	1	1	1.07
C6	3	3	3	3	3	4	3	4	4	4	2		4	3.33
C7	3	4	3	3	3	4	3	4	4	4	2		4	3.41
C8a	3	2	3	3	3	3	2	3	4	4	3	3	3	3
C9s	3	4	3	3	3	2	2	3	3	3	2	4	4	3
C10s	2	2	2	2	2	3	2	3	4	3	3	3	3	2.61
C11s	3	3	3	2	2	2	2	4	4	4		4	4	3.08
C12														
C13	3	2	2	4	4	4		4	4	3		3		3.3
C14	3	4	3	3	3	3	2	3	4	4	3	4	4	3.30
C15a	3	2	3	3	2	3	3	3	4	4	2	4	3	3
C16	3	3	3		2	2		3	2	2	1	2		2.3
C17	2	2	2	3	3	3	3	4	3	2	2	3	2	2.61
C18	3	4	4	3	3		1	3	4	4	3	4	4	3.33
C19	4	3	3	4	4	3	2	3	1	1		1	2	2.81
C20a														
C21	3	3	3	4	3	2		4	3	3		3	3	3.09
C22	4	4	3	4	4	3	4	4	4	4		4		3.81
C23	3	3	3	4	3	2	2	3	2	2	3	2	1	2.53
C24	4	4	3	4	3	3	4	4	4	3	3	3	4	3.53
C25	2	2	2	1	2	1	1	3	1	2	3	3	3	2
C26	4	3	3	4	1	4	2	4	1	1	4	3	3	2.84
C27	3	3	3	2	3	2	1	4	4	3	2	3	1	2.61
C28	4	2	2	1	1	1	1	4	4	3	3	3	3	2.46
C29	4	3	3	4	3	4	3	4	4	4	4	3	4	3.61
C30a	4	3	2	4	3	4	3	4	4	4	3	3	3	3.38
Total	86	84	78	82	73	74	56	95	92	86	58	81	75	
Tot.us	28	28	28	27	28	27	25	28	28	28	23	26	25	
Mean	3.07	3	2.78	3.03	2.6	2.74	2.24	3.35	3.28	3.07	2.52	3.11	3	

The codes at the top of the table refer to the following activities:

Construction task (C.t)
Make believe play (Mbp)
Joint interactive play (Jip)
Demonstration task (D.t)

Description of picture (Des)
Story from a book (St. b)
Cartoons (Cart)
Conversation / non routine event (Conv)
Emotions (Em)
Social difficulties / divergence (S.d)
Break (Br)
Friends, loneliness plus marriage (f.l.m)
Creating a story (Cr.s)

Appendix 5.21: Significance of difference between means of MTDA

testers questionnaires and means of ADOS testers questionnaire

Table Ap.12 Descriptive statistics for the means of the testers questionnaires for the ADOS and the MTDA

	Number of filled in questionnaires	Mean	Std. Deviation
ADOS (var 00037)	28	2.93	.55
MTDA (var 00036)	30	3.40	.33

Table Ap.13 Wilcoxon Signed Ranks Test for the means of the testers questionnaires for the ADOS and the MTDA

Test statistics (b)

	ADOS – MTDA
Z	-3.906 (a)
Asymp. Sig. (2-tailed)	.000

Based on positive ranks
Wilcoxon Signed Ranks Test

P < .05 and the difference between the two results is significant.

Appendix 5.22: Results from the descriptive section of the testers questionnaires
(See Appendix 5.9) to see a blank 'tester's questionnaire'

Question 2: **Did person carrying out test feel that they administered the test well?** The following table answers this question with yes or no. Additional comments are listed after the table.

Table Ap.5.14: Answers to first part of question 2 (testers questionnaires)

Child	Ados tester	MTDA tester
C1	Y	Y
C2	N	Y
C3	N	Y
C4	Y	Y
C5	N	Y
C6	Y	Y
C7	Y	Y
C8a	Y	Y
C9s	Y	Y
C10s	Y	Y
C11s	Y	Y
C12		Y
C13	N	Y
C14	Y	Y
C15a	Y	Y
C16	N	Not sure
C17	Y	Y
C18	Y	Y
C19	Y	Y
C20a		Y
C21	Y	Y
C22	Y	Y
C23	N	Y
C24	Y	Y
C25	Y	Y
C26	Y	Y
C27	Y	Y
C28	Y	Not sure
C29	Y	Y
C30a	Y	Y

Y = Yes, N = No

Question 2: **Did person carrying out test feel that they administered the test well?** (additional comments)

ADOS:

C1: I found myself trying really hard with lots of verbal and non-verbal enthusiasm and pretty flat responses from C1. I kept trying to engage him in the conversation tasks

with little success I think.
C2: Not enough effort made to engage C2. It was difficult to separate anxiety/negativity from inherent social difficulties.
C3: I allowed C3's defiant approach to get to me! My 'schoolish' responses did not help C3 to engage.
C5: Really a failed ADOS. Patient too anxious and negative to attempt anything but 'play' with narratives.
C12: Child too anxious to do any activity except use pin art, unable to answer any emotional/relationship questions. Unable to score.
C13: A bit rushed due to time constraints.
C15: Test went well. Child completed all elements.
C16: Child very, very anxious. Had to do the test in school. Child distracted.
C21: Had the help of the consultant to observe and complete assessment and discuss afterwards.
C22: Time constraints, therefore missed two items.
C23: Very difficult to engage child.
C28: Unable to complete a great deal because of child's refusal.

MTDA:
C1: Easier as child brighter and less low (than previous week's MTDA)
C2: It was useful to stay quite bland and unemotional but answer all questions in straightforward way.
C3: It helped not to react to C3's attempts to 'shock' me by his suggestions of violence, (e.g. shall I break the drum?)
C7: I was slightly distracted by mechanics of keyboard which I was trying to understand and alter.
C9s: He was quite distractible and needed lots of patience. Eventually, however, he responded to clear structure of session.
C16: Very frustrating session. I tried to get him to tell us why he was cross but he just sulked and looked out of the window, refusing to co-operate in any way.
C18: I wished I had tried 'free percussion' on the floor to look at physical spontaneity.
C22: I was slightly hampered by a cough and exhaustion!
C23: Perhaps I should have diverted him when he was upset by offering him a different instrument to choose to finish off with.

Question 3: **What were the limitations of the test?**

ADOS:
C1: I have to judge his 'insight' into emotions/relationships as being minimal, given his responses – but I think he might have seemed more able/insightful if I could have asked different/more questions.
C2: He couldn't do relationship/emotion task. I don't feel I know why. autism spectrum?; something affecting conversation?
C3: Difficult to separate oppositionality and Tourettes from Autistic impairments.
C5: Unable to administer to highly anxious and disruptive child.
C6: Useful test. Elicited good social skills.

C7: Child became quite 'fidgety' in verbal sections.
C8a: Not enough conversational opportunities. Not enough time for child to demonstrate creative ideas.
C9s: Highly structured. One to one with adult didn't reveal some of the social difficulties.
C10s: Difficult to keep child on task in language based tasks.
C14: Child very negative.
C15: None.
C16: Lots of activities child refused.
C17: Child wanted to go out to play at the end and increasingly reluctant to take part. Struggled with verbal elements.
C18: Limited by child's hyperactivity.
C19: Child unable to answer question section.
C21: Time constraints, parents had to go after 30 minutes so 'break' and 'cartoon activity' not administered.
C22: Time constraints.
C23: Child refused many of the items.
C24: None.
C25: Child very reluctant to participate. Very withdrawn, particularly difficult to draw conclusions.
C28: Unable to complete a great deal because of child's refusal.

MTDA:
C6: Didn't feel as age inappropriate this week than last.
C7: Language unfamiliarity/abnormalities due to American background.
C10s: I felt slightly frustrated by Mum's frustrations and the way, at times, she seemed to draw her daughter into conflicts.
C12: He said he was too embarrassed by the 'Hello' song. I acknowledged this and briefly hummed the song.
C15a: He was slightly self conscious having a visitor plus the research assistant behind the camera.
C16: He was completely stuck in being angry and refused to take part. Tried to get Mum's negative attention by eating toy aeroplane and picking at his scar. Tried to get my negative attention by opening window and kicking wall.
C21: He was on his first trial of Ritalin today and seemed a bit 'out of it', slurring speech, forgetting things and generally a bit vague.
C22: He was slightly unsure of camera and questions, but this didn't feel deep-seated.
C27: He was difficult to 'get going', but would eventually co-operate when given lots of time and praise.

Question 4: **Particular immediate impressions of child**

ADOS:
C1: Disparity between some creative/imaginative skills and his insight into the above areas.
C2: Anxiety and fear of failure lead to disruptive behaviour and fear of failure.

C3: Oppositional, very anxious and then aggressive when he couldn't answer 'feelings' and 'relationship' questions.
C4: Very odd intonation and stress patterns. Poor eye contact. But good sense of humour.
C5: Poor eye contact. Negativism. Attempts to control me. Lack of spoken language.
C6: Sensitive child. Low self esteem. Quite good insight but may be socially immature. Quite a performer in some ways.
C7: Tangential language. Difficulty with conversation. Odd eye contact.
C8a: Very good eye contact. Co-operative. Struggled with language.
C9s: Co-operative. Overactive. Lots of facial expressions. Socially approaching but unable to talk about emotions/relationships..
C10s: Fidgety. Wouldn't ask for help or spontaneously initiate any conversation.
C11s: Very slow. Not much language. Unaware of environment. Co-operative. Lack of awareness of social relationships.
C13: Co-operative but guarded about difficulties.
C14: Controlling. Concrete. Rigid.
C15a: Very articulate. Good conversation. Very concrete and litteral. Socially immature.
C16: Anxious +++
C17: Lack of social/emotional awareness, tense and uncomfortable. But unable to vocalise low feelings.
C18: Quite chatty. Very egocentric and rigid.
C19: Disconnection once test became more verbal.
C21: Had learning disability, so was slow and flat.
C22: Lovely, sociable little boy. Socially disinhibited.
C23: Very angry and fearful, especially when he felt under pressure.
C24: Unhappy little boy. Lack of social understanding.
C25: Stuck.
C26: Another child who clams up in the question section.
C27: Very inhibited. Shy? Lack of understanding.
C28: Demand avoidant.
C29: Quirky. Odd thought patterns.
C30: Co-operative. Very concrete.

MTDA:
C1: He was able to communicate in simple ways. Much more spark and happier than last week. Speech problem? Short attention span but not distracted. Lowish ability? Musical, a good position on violin.
C2: Big contrast to previous session. C2 pushing boundaries less, and less anxious. But still not communicative through his playing.
C3: Lack of confidence, difficulties in remaining focused, but he was warm and possible to work with.
C4: Contrast between humour, playful exchanges and musicality, and 'stuckness' at other times.
C5: He was much more confident this week, beginning to test boundaries. Still difficult to sustain any dialogue and even engage in non-verbal exchanges. Difficult to tell whether he is learning disabled or isolated and defiant? He was really delighted to learn a tune on the piano, clearly feeling good about achieving something.

C6: A confident approach to music making. Made clear choices and able to enjoy music making very independently.

C7: Again I was struck by the contrast between warm, playful interactions and the strangeness of his verbal reactions and story. Can be very interactive and enjoy initiating and following changes, but at the same time does seem to have his own agenda some of the time.

C8a: Difficult to define. Something slightly unusual in her ways of exchanging/ communicating. But lots of warmth and spontaneity.

C9s: It seemed important to be firm but not get into open conflict which appeared to be often what C9 was seeking. Real dialogues were difficult. He seemed to be watching reactions rather than having real exchanges.

C10s: She seemed very clumsy and disorganised physically. Her emotions / attachment to Mum were odd, she both wanted to control her mother and was affectionate with her in an emotionally immature way. She was very imaginative, but at other times immature: "me do it".

C11s: Although quiet she made clear, definite choices and was non-verbally communicative. She had her own musical ideas and was quietly spontaneous and imaginative. Mum was also quiet and anxious (self-conscious) in her playing but supportive to her daughter and affectionate.

C12: Although he scores 7 in the first category it feels as though his hyperactivity and emotional difficulties, rather than a pervasive developmental disorder are causing his problems. This session was preceded by me playing two video excerpts from previous session to him and his Mum and younger sister (at his request). This seemed to boost his self-esteem.

C13: He was very stuck in his own set pattern of fast bursts of playing. This made musical interactions difficult. However, more communicative in joint piano-playing.

C14: More relaxed this week. Could copy and follow more, but in a 'set' way rather than in a spontaneous way. Couldn't be drawn into movement exchanges at all. Stood rigid! Still had own agenda. Could compromise through verbal negotiation.

C15a: Slightly less communicative, but still enjoyed being in room with me and pleased to play the instruments.

C16: Very angry boy, stuck in destructive patterns, unable to think or reason about his anger. Mum handled him well and didn't allow his anger or attention-seeking behaviour to get to her.

C17: Could communicate non-verbally, but dialogues were laboured and it wasn't easy to get 'quick' spontaneous responses. Nevertheless, she appeared very musical and could interact through music in sensitive ways.

C18: Eventually possible to get a glimmer of a smile and some spontaneous interactive playing, but this was hard work. Enjoyed exploring instruments on his own. Liked to count notes and mouth numbers as he was counting.

C19: Again anxious at start, but then quite spontaneous and playful and communicative, wanting me to copy him but also easily drawn into two way exchanges. I wondered whether there was a physical stiffness to his upper lip/nose.

C20: She enjoyed playing with me and there was a sense of fun, especially if anything was slightly different. (e.g. "down the drain" in 'Ba Ba Black Sheep', plus when the notes on the metalophone came off).

C21: More communicative musically this week. Could copy and initiate in kazoo dialogue. Some odd, repetitive questions about who could play clarinet and why I played it.
C22: Very communicative and full of fun at times.
C23: He found it harder to focus and allow himself to enjoy the music.
C24: Much greater sense of fun and more communicative, although still quite self absorbed. Interested in structure of instruments and how they work. Absorbed by questions in his mind not always related to what we were doing.
C25: He was much less self-conscious and embarrassed, but still aware of camera, making faces and facing the camera to 'speak' to Mum and Dad. Story was chaotic but he was willing to make suggestions. When given a structure, he was able to take turns, but spontaneous exchanges were very difficult to elicit.
C26: Playful side could be brought out, little smiles when I used whole arm to play piano and occasionally during our playing at other times. Very smiley and laughed when I 'got in his way' in percussion activity on the floor. Generally freer in his playing but still isolated and little spontaneity or eye contact.
C27: He was silent and didn't utter throughout the session. He did, however, watch what I was doing at times, and complied with my suggestions in a passive kind of way.
C28: He was less abusive and reluctant to come than last week. Maybe he would benefit from further non-directive sessions.
C29: Sparky and communicative. Sometimes used patterns and structures to organise his playing, but didn't get stuck in them. Quite impulsive and at times lost himself in his playing. Was able to listen and notice changes in my playing. Easily diverted at times but very creative and imaginative.
C30: Again grimacing and odd facial expressions apparent. He strayed into 'gibberish' at times using different accents (American?, Irish?). Delayed communicative responses, perhaps analysing how he should respond rather than responding spontaneously. Some attention difficulties, but easily re-focussed. Imaginative in individualistic way. Quick to learn a well known tune, but no sense of achievement. Confident and playful but slightly unusual.

Question 5: **Reaction of research assistant regarding whether child behaved in an expected or unexpected way during the session.**
(only relevant to MTDA's)

For this question the research assistant was asked to circle one of the following:
Expected way (E.W.)
Slightly unexpected way (S.U.W.)
Very unexpected way (V.U.W.)

Results for this part of the question are included in the following table. The comments on this questions are included after the table.

(Appendix 5.22 continued)
Table Ap.5.15: Answers by research assistant to first part of question 5 (MTDAs only)

Child	Rs. Asst reponses
C1	S.U.W.
C2	
C3	S.U.W.
C4	S.U.W.
C5	S.U.W.
C6	E.W.
C7	E.W.
C8a	
C9s	
C10s	
C11s	
C12	E.W.
C13	S.U.W.
C14	S.U.W.
C15a	
C16	
C17	S.U.W.
C18	E.W.
C19	S.U.W.
C20a	
C21	S.U.W.
C22	
C23	E.W.
C24	S.U.W.
C25	E.W.
C26	E.W.
C27	E.W.
C28	S.U.W.
C29	S.U.W.
C30a	

S.U,W.: Child responds in slightly unexpected way
E.W.: Child responds in expected way.
Blanks: Research assistant was not present

Comments from question 5:

C1: Quieter in individual session, was more verbal and a little mischievous in group session but this could have been because of peers behaving in very disruptive way.

C3: More open to interaction than in group, able to listen and respond. Less silly and provocative behaviour (i.e. behaviour could be contained more in one-to-one session than in group). Seemed to enjoy having the control in individual session which he

couldn't have continuously in the group. Possibly less anxious in group, asked less questions about what we were going to do next.

C4: He seemed to enjoy the individual session more this week. He was quite engaged during some activities in the group but he was more animated in the individual session. However, this might have been because there were some very disruptive behaviours going on in the group. Perhaps one-to-one interaction is easier and more enjoyable to him than group work.

C5: I was surprised by the fact that he seemed less self conscious and slightly less inhibited. Played a little more freely. Commented that learning melodies had been 'excellent'. This is the most positive I have heard him be.

C6: Chose to play drums plus keyboard as 'solo' – very little eye contact during these times but then seemed very focused and engaged – so, not in PDD way but in 'concentrating' way. Learnt 'When the Saints' surprisingly quickly.

C7: I was surprised that he chose to make up a story as this was the activity he had found most difficult last time. Story was quite unusual.

C12: Said that he found individual session easier to concentrate in.

C13: Again much less confident than in the group. It seemed very difficult for him to choose in this session. In the group, interestingly, he chose the harp straight away, which the music therapist had shown him how to play in his first MTDA.

C14: More fixed on when ending was going to occur in this session. It felt like he may have wanted to feel more in control. As last week, much more relaxed than in group.

It also seemed that he was able to listen and respond as well as lead.

C17: She presented as much quieter and less self confident than in the group. However, her musicality was more apparent.

C18: He presented himself as much less restless and impatient than in the group.

C19: Much more confident than in group. More communicative and playful.

C23: His behaviour was fairly similar to that observed in the group although I do feel he finds one to one interactions easier to manage.

C24: More smiling and better eye-contact. Much more able to manage in one-to-one setting than in group today.

C25: Much less anxious than last session. Some sexualised language, which I expected as it had been observed in the group.

C28: He listened more in the individual sessions and there were a few moments when he appeared to be settled and calmer.

C29: Focused better in individual session.

Appendix 5.23: Children's structured interviews; which children were interviewed

The following children were interviewed after both MTDA and ADOS sessions:
C1; C5; C6; C7, C8a, C12, C14, C17, C18, C19, C20, C21, C22, C24, C25, C26, C29 and C30a.

C3, C4, C9s, C10s, C11s, C13 and C27 were interviewed only after the MTDA session.

C2 was interviewed only after the ADOS session.

C15a, C16, C23 and C28 were not interviewed at all.

Appendix 5.24: MTDA – Results of the Children's Structured Interview

General

C1: Generally monosyllabic "yes"; "OK" except for one long sentence out of context. His responses were not greatly thought about. Quite automatic.
C3: Tendency just to say "yes" to everything unless prompted to elaborate. At times it

felt as though he was switching off and not listening.
C12: Said he was in a better mood this week. Commented that he found it easier to concentrate on a one-to-one basis rather than in a group.
C14: Talked a lot about Dad and the family's pet goat. The goat used to be bullied but was now OK. Said he thought it would die next year. Seemed to get stuck on this topic.
C26: Immediately said the session was good.

Motivation/interest

"What did you like best? / What was your worst thing?"

C1: "liked everything"; "violin was best, was OK".
C3: "liked everything"; "especially violin".
C4: "the first story"; "nothing was worst".
C5: "liked learning melodies on the piano"; "nothing was worst".
C6: "liked xylophone and learning tunes"; "nothing was worst".
C7: "liked playing keyboard best", "no worst thing".
C8a: "liked cymbal and kazoos best; "most difficult thing was playing the cabassa as it hurt my hand".
C9s: "liked autoharp best, shakers least".
C10s: "liked guitar and drum best".
C11s: "liked piano best"; "no worst thing".
C12: "liked everything", "no worst thing".
C13: said he liked everything and then said "horn", no worst thing.
C14: "keyboard because it's automatic", "no worst thing".
C17: "liked violin best, the cymbal was too loud"
C18: "liked piano best, while Amelia was playing the keyboard, the drum and the cymbal were too noisy".
C19: "liked the drums best", "nothing was worst".
C20: "liked drum and cymbal best because they made a big sound, didn't like cabassa because it made a short sound", also said that the "silver" instrument (triangle?) was hard to play.
C21: "liked keyboard best"; "wind-chimes were too loud".
C22: "liked kazoo best", "worst thing was the bass xylophone",
C24: "liked violin best", "no worst thing".
C25: "liked red drums best", "kazoo least".
C26: "liked the cabassa best". "Worst thing was the horns because they only made one sound".
C27: "liked keyboard best", "didn't enjoy violin that much."
C29: "liked kazoo, piano and keyboard." "Didn't like drum and cymbal because I couldn't do what Amelia was doing."
C30a: "horn was best", "triangle was worst".

"Have you ever done any of these games / played any instruments or done any singing before?"

C1: “never played violin or kazoo before; kazoo was funny; make stories up at school, sometimes at home.”
C4: “played a metal kazoo before, but nothing else”.
C5: “never played piano before”.
C6: talked of having been taught xylophone in year 6 (now in year 8).
C7: had played maraccas, rainstick before at school.
C8a: “some at school”.
C9s: “sometimes”.
C10s: “no”.
C11s: “no”.
C12: “have.n’t played violin before”
C13: had played everything before.
C14: “played piano and guitar before”
C17: “yes”.
C18: “not piano”.
C19: “yes”.
C20: “yes”.
C21: “haven’t played wind chimes before”.
C22: “not the kazoo”.
C24: remembered how many times he had played the violin before. Said he hadn’t played the keyboard before.
C25: “not kazoo”
C26: didn’t know. When questioned again, said he’d played cabassa at his own school.
C27: “yes, except for violin”.
C29: “not castanets or kazoos”
C30a: had played triangle before but not the other instruments.

Experience of being with another adult

“Was it like other games you’ve played before with your family, or a friend/like playing instruments or singing at school / with a teacher / with a friend?”

C5: “no”.
C6: had learnt tunes before.
C9s: “like at school”.
C10s: “yes”.
C11s: “different”.
C14: little bit different from being at school but couldn’t say why.
C17: “no it’s not. Other games are not one to one and you don’t get to choose your own instruments”.
C18: “no, music is normally in a group of five, you don’t choose instruments”.
C19: “same as school”.
C20: “yes, the same”.
C21: “different, school doesn’t have so many instruments”.
C22: “story was different”.

C25: “no”.
C26: didn’t know. Doesn’t do music at home with his family.
C27: didn’t know.
C30a: “yes”.

“Did you like taking turns?”

C1: “liked it when we took turns and when we were playing together”.
C3: “yes”.
C4: “yes”.
C8a: “yes”.
C9s: “no”.
C11s: “yes”.
C12s: “yes”.
C14: “yes”.
C17: “yes”.
C24: “yes”.
C26: “yes”.
C27: “not sure”.
C29: “yes”.
C30a: “yes”.

“Did you like choosing?…..or did you prefer adult choosing?”

C1: “preferred choosing”.
C3: “preferred choosing”.
C4: “preferred choosing”.
C5: “both, didn’t mind”.
C7: preferred it when Amelia chose as he said he felt he had mostly chosen the previous week.
C8a: “didn’t mind both of us choosing”.
C9s: “I preferred choosing”.
C10s: “liked it better when I chose”.
C11s: “I liked choosing better”.
C12: “don’t mind either way”.
C13: acknowledged that he found choosing difficult but couldn’t really say why. Muttered something about there being too many instruments on the shelf.
C14: “both”.
C17: “didn’t mind”.
C18: preferred choosing himself.
C19: preferred choosing himself.
C20: “preferred it when Amelia chose”.
C21: “preferred it when Amelia chose”.
C22: “preferred it when Amelia chose”.
C24: preferred Amelia choosing because “she chooses the best instruments”.
C25: preferred choosing himself.

C26: preferred Amelia choosing.
C27: preferred choosing himself.
C29: preferred choosing himself.
C30a: preferred choosing himself.

"Was it fun being with Jo/Amelia?"

C3: "no" then "yes" then "sometimes fun sometimes not".
C4: "yes".
C5: "yes".
C6: "yes".
C7: "great fun".
C8a: "yes".
C9s: "no, it's fun being with Mummy".
C10s: "yes".
C11s: "yes".
C12: "yes".
C14: "don't mind".
C18: "a bit".
C19: "yes".
C20: "yes".
C21: "yes".
C22: "quite fun".
C25: "yes".
C26: "yes".
C27: "I don't know".
C29: "yes".
C30a: "yes".

"Did you like it better when you were playing alone?"

C3: "on own".
C4: "playing together".
C6: liked drum solo, but also playing xylophone with Amelia. So liked both playing on his own as well as playing with an adult.
C7: "preferred playing together".
C8a: "playing alone".
C9s: "on my own".
C10s: "on my own".
C11s: "on my own".
C12: "playing together".
C17: "prefer playing with Amelia".
C18: "prefer playing together".
C19: "prefer playing together".
C20: "preferred playing together".
C22: "preferred playing together".

C24: “preferred playing together”.
C25: “preferred playing alone”.
C27: preferred playing on his own.
C29: preferred playing alone.
C30a: preferred playing alone.

Self esteem/confidence

“You’re quite good at doing puzzles / building towers / playing the drum; singing…..is it fun?”

C1: C1 was not responsive to praise about his violin playing. When prompted he said he’d be good at playing it and “it felt nice”.
C3: “Good feeling being good at the violin”. Was able to acknowledge that he was good.
C4: At first said he had forgotten what it felt like to be good at something. With prompting was able to say that it was a good feeling.
C12: Thought that it was quite strange that he was good at the violin. Initially didn’t want to try it but then thought he’d “give it a go”.
C13: Couldn’t think of anything he was good at. Eventually agreed that he had some good ideas in the story. Said it was an “all right” feeling.
C14: “pretty good feeling making up a good story”.
C17: “couldn’t say how it felt to be good at violin”.
C18: “OK”.
C21: “said he was good at violin…but didn’t play it. Then said he was good at the keyboard.
C22: Felt best at playing the kazoo.
C24: “I feel good at playing the organ because you don’t have to fiddle with it”.
C25: Felt good at copying, was confident at this.
C26: Thought he was best at drum and cymbal but couldn’t say why.
C27: Best at keyboard. It made him feel “cool”.
C29: “it was a brilliant feeling learning three blind mice”.
C30a: Said feeling good at things was “pretty fine”.

“It’s a good feeling being good at things….do you do these things at home/school with family/friends?”

C5: “dunno…” (but when asked again and given time) “an excellent feeling”.
C6: “makes me feel proud that I can do something”.
C9s: “being good at things makes me very happy”.
C10s: “being good at things makes me happy”.
C11s: “being good at things makes me happy”.
C19: being good at things is a “fine feeling”.
C20: “being good at things feels fine”.
C22: “feeling good was quite fun”.
C24: “it’s quite a good feeling”.

"Explore an obvious area of difficulty in a positive way"

C5: "story wasn't difficult to make up".
C6: Story was quite difficult for him. He said that he found it difficult to think of an idea (like a name) quickly. Playing the instruments at the same time as making up the story helped because he could play while he was thinking or continue the tune that Amelia was playing.
C7: enjoyed making up the story and talked about some of his ideas. Couldn't say why he had found it easier this time.
C8a: "found making up the story quite difficult"
C9s: "difficult things make me not very happy"
C10s: "liked all instruments".
C12s: said it was a minor difficulty when Amelia said they had to end a piece, but that he didn't mind.
C14: "nothing was difficult".
C17: found it difficult to think of ideas.
C18: "story difficult but it was all right".
C19: "story was fine".
C27: "didn't know what was difficult".

Perception of other person's feelings

"What did you think the adult liked best?"

C1: "Amelia liked the harp best".
C3: "Amelia liked piano best".
C4: "I don't know. I can't read her mind" (said in a matter of fact way not in rebellious way).
C5: "Amelia liked playing the piano best".
C6: "Amelia liked the xylophone best".
C7: "Amelia liked playing the piano when I was playing the keyboard best".
C8a: "Amelia liked playing the piano best".
C9s: "Amelia liked drums best".
C10s: "Amelia liked piano best".
C11s: "Amelia liked drums best".
C13: Said Amelia liked piano best. But couldn't say why.
C14: Didn't know.
C17: "Amelia liked the story best".
C18: "Amelia liked the piano best".
C19: "Amelia liked the piano best".
C20: "Amelia liked the bongo drums best".
C21: "Amelia liked clarinet best".
C22: "Amelia liked piano best".
C24: "Amelia liked autoharp best…she smiled".
C25: "Amelia liked the violin best".
C26: Said drum and cymbal and then that "she played the piano a lot".

C27: Wasn't sure.
C29: "Amelia liked the piano best".
C30a: Didn't know.

"Did they seem to enjoy themselves"

C3: Thought Amelia enjoyed herself.
C4: "yes".
C6: "yes".
C7: "yes".
C8a: "yes".
C9s: "yes".
C10s: "yes".
C11s: "yes…(when prompted), she smiled".
C13: "yes".
C20: "yes".
C24: "yes".
C27: "yes".
C29: "Amelia enjoyed herself because she had a big grin on her face".
C30a: "yes I think so".

"Perhaps you both had fun together….."

C4: Agreed that he'd had fun.
C7: "yes".
C9s: "only Mummy and me had fun".
C10s: "yes".
C11s: "yes".
C13: "yes".
C20: "yes".
C26: "yes".
C30a: "yes I think so".
Appendix 5.25: ADOS – Results of the Children's Structured Interviews

General

C2: Tendency to completely change subjects and suddenly insert new ideas into sentences. Felt that the nails used at the Croft (in ADOS test) had been sanded down and were not razor sharp like the shop ones were. Wanted to be reassured that audio-tapes used in research would be kept under lock and key.
C5: Was reluctant to talk about the ADOS. He had been in and out of the room and, at one point, hid in the cupboard. Spoke briefly about some toys but otherwise claimed he couldn't remember it.
C7: Became a little 'switched off' at the end of this interview and it was difficult to keep him focused.
C12: The person doing the ADOS with C12 felt that he had not complied enough for the

test to be scored. In the interview about the ADOS it was difficult to encourage him to talk and he was impatient to finish.

C14: Didn't want to tell Dr. Jo about his mother getting married. Talked about remembering this when looking at photographs, (possible during ADOS test)

C17: Some contradictions, e.g. initially said she didn't find anything difficult, later said she'd found everything difficult. Became restless in second half of session.

C18: ADOS occurred prior to admission, so he needed reminding. He was also beginning to get very restless and impatient to go back to school.

C19: Didn't answer many of the questions but remembered some details from the ADOS, particularly when a car dropped on the floor.

C26: Said he remembered ADOS but answered "don't know" to most of the questions.

Motivation/ interest

"What did you like best / what was your worst thing"

C1: Liked the book and talked all about the flying frogs; "liked everything".

C2: "Nail box was best"; "Didn't like the Christmas thing, it was a bit babyish".

C5: "didn't like nothing, everything was worst".

C6: "liked making up own story with toy figures best"; "nothing was worst".

C7: "liked making up the story best"; "no worst thing".

C8a: "liked decorating the Christmas tree best", "the thing that was really difficult was making up stories …pictures with blanks".

C12: "liked instrument at end of ADOS best" , "story was worst".

C14: "liked everything, didn't like the activity where you had to put your hand in a bag and take out objects". Said he wanted the figure of the man before the toy car.

C17: Liked story best, nothing was worst. When it was pointed out that it was interesting that she liked making up story in ADOS but found it difficult in The MTDA, she said that it was because in the ADOS there were plastic people to make up the story around.

C18: talked about liking bowling best, no worst thing.

C19: liked the chocolate activity best, didn't like the story.

C20: likes playing generally; nothing was worst.

C21: liked "something that popped out" best. Nothing was worst.

C22: liked reading the book best ; no worst thing.

C24: liked adventure that he made up best. No worst thing.

C25: didn't like making up the story. "questions were boring".

C26: didn't know.

C29: liked toys and speaking best. No worst thing.

C30a: making up the story was best. No worst thing.

"Have you ever done any of these games / played any instruments or done any singing before?"

C1: said he had not done these games before.

C6: "No, but have filled in questionnaires like the one at the end of the test before".

C7: “no”.
C12: “yes”.
C17: “no”.
C19: “yes”.
C20: “yes”.
C21: “no”.
C22: “kind of….some of the characters were new”.
C24: “no”.
C26: didn’t know.
C29: “no”.
C30a: hadn’t done some things.

Experience of being with another adult

“Was it like other games you’ve played before with your family, or a friend / like playing instruments or singing at school / with a teacher / with a friend?”

C7: “no”.
C8a: “with family not school”.
C17: “no”.
C18: “no”.
C19: “it was different”.
C20: “it was like at school”.
C21: “yes”.
C24: “no”.
C25: “no, sort of”.
C26: didn’t know.
C29: “no”.
C30a: “yes”.

“Did you like taking turns?”

C1: “yes”.
C22: “yes”.
C24: “yes”.
C30a: “yes”.

“Did you like choosing?…..or did you prefer adult choosing?”

C5: “didn’t choose anything”.
C12: Preferred choosing himself.
C14: Prefers to choose, but there were no opportunities to choose in the ADOS.
C17: Preferred choosing herself.
C22: “liked both”.

C26: Didn't mind.
C29: didn't mind Jo choosing what they were going to do.

"Was it fun being with Jo/Amelia?"

C1: "quite fun"; Didn't like being with Dr. L. was quite tired.
C2: "No, some was fun".
C5: "it was boring".
C6: "yes".
C7: "yes".
C8a: "yes".
C12: "yes".
C20: "yes".
C21: "yes".
C22: "very fun".
C24: "yes".
C25: "yes".
C29: "yes".
C30a: "yes".

"Did you like it better when you were playing alone?"

C2: "Didn't like Dr. Lucy much…preferred doing own thing".
C7: "preferred playing together".
C8a: "preferred playing alone".
C12: "preferred playing with Dr. Jo".
C14: First said "alone" but then commented that he didn't really play alone.
C21: "preferred playing alone".
C22: "preferred playing with Dr. Jo".
C24: "preferred playing with Dr. Jo".

Self esteem/confidence

"You're quite good at doing puzzles; building towers / playing the drum; singing…..is it fun?"

C1: Couldn't think of anything he was good at.
C2: Felt best at nail box activity. Said that "the nails used at the Croft had been sanded down and were not razor sharp like the shop ones were." Felt he was "no good at making up a story".
C5: "activities were easy"
C6: "didn't find anything difficult".
C8a: Being good at something makes her feel happy.
C14: "not really good at anything".
C17: Couldn't think of anything she was good at.

C20: Felt good about making up a story regarding a hungry girl who ate pizza.
C21: Felt fine making up the story.
C22: Felt good about making up a story.
C24: Felt good at the "spinning pen".
C26: Didn't know.

"It's a good feeling being good at things….do you do these things at home/school with family/ friends?"

C2: Said he did nothing at home. Played on the computer with friends.
C12: "nothing".
C22: "quite good feeling actually".

"Explore an obvious area of difficulty in a positive way"

C7: "nothing was difficult".
C8a: Making up story was hard but she agreed that she had some good ideas.
C12: "nothing".
C14: Found everything quite difficult but didn't go into details.
C17: Found everything difficult.
C22: Nothing was difficult.
C24: No areas of difficulty.
C25: Found making up the story was difficult but didn't know why. Said he didn't really make up a story "just threw them around" (probably referring to plastic figures).
C29: Nothing was difficult.
C30a: No areas of difficulty.

Perception of other person's feelings

"What did you think the adult liked best?"

C1: Didn't know what Dr. L liked best.
C2: Nothing.
C5: "She didn't like anything".
C6: "Dr Jo enjoyed my story best because she laughed…but I can't read her mind so I'm not sure".
C7: "not sure".
C8a: "She liked the cartoons best".
C12: Didn't know.
C14: Didn't know.
C17: Didn't know.

C18: Didn't know.
C19: "Dr. Jo liked chocolate activity best.
C20: "Dr. Jo liked making up the story best".
C21: "Dr. Jo liked playing with the music best".
C22: "Dr. Jo liked reading a book and playing dinosaur story".
C24: "Dr. Jo liked adventure I made up too. Story was lots of fun apart from the bit where they were outside, rolling on the grass".
C26: Didn't know.
C29: She liked it best when he made a story up with three people.
C30a: "she liked the peanut story best".

"Did they seem to enjoy themselves?"

C2: Generally thought ADOS was OK. Thought that Dr.L. didn't enjoy it and was doing it for the money.
C8a: "yes".
C20: "yes".
C21: "yes".
C22: "yes".
C25: "thought Dr. Jo had enjoyed it".

"Perhaps you both had fun together….."

C1: "bit of fun….not a lot".
C22: "Dr. Jo sounded jolly and happy".
C30a: "yes".

Appendix 5.26

Table Ap.5.16: Results of the ADIs

Child	Reciprocal Social Interaction. Cut-off: 10		Communication Cut-off: 8		Repetitive behaviours Cut-off: 3		Autism / Asperger Diagnosis
C1	16	2	13	2	1	0	No
C2	3	0	2	0	0	0	No
C3	19	2	12	2	9	2	Yes
C4							
C5	23	2	9	2	2	0	No
C6							

C7	14	2	12	2	7	2	Yes
C8a	5	0	5	0	3	2	No
C9s	21	2	18	2			
C10s	16	2	7	2	2	0	No
C11s	5	0	11	2	0	0	No
C12	14	2	11	2	4	2	Yes
C13							
C14	18	2	14	2	5	2	Yes
C15a	11	2	2	2	3	2	Yes
C16	11	2	13	2	7	2	Yes
C17							
C18	26	2	14	2	7	2	Yes
C19	5	0	5	0	1	0	No
C20a	17	2	16	0	4	2	No
C21	4	0	4	0	0	0	No
C22							
C23	6	0	8	2	5	2	No
C24	35	2	9	2	8	2	Yes
C25	14	2	12	2	2	1	No
C26	23	2	18	2	7	2	Yes
C27	17	2	5	0	2	0	No
C28	19	2	21	2	2	0	No
C29	12	2	10	2	2	0	No
C30a							

The blanks in the table are those children who didn't have ADI tests.

Appendix 5.27

Table Ap.5.17: Agreements and disagreements between ADI diagnoses and MTDAs, ADOS and Croft diagnoses

Child	ADI	MTDA	ADI/ MTDA	ADOS	ADI/ ADOS	Croft	ADI/ Croft	All 4 Tests
C1	0	0	Y	0/1	Y	1/0	Y	Y
C2	0	2/1	N	0/1	Y	0	Y	N
C3	2	0	N	2	Y	2	Y	N
C4		0/1		2		2		
C5	0	2/1	N	0	Y	1/0	Y	N
C6		0		0		0		
C7	2	0/1	N	0	N	1/0	N	N
C8a	0	0	Y	0	Y	0	Y	Y
C9s		2/1		2/1		1/0		

C10s	0	0	Y	2	N	1/0	Y	N
C11s	0	0	Y	2	N	1/0	Y	N
C12	2	2/1	Y			2	Y	
C13		2		0		0		
C14	2	2/1	Y	2/1	Y	2	Y	Y
C15a	2	0	N	0	N	0	N	N
C16	2	2/1	Y	2	Y	2	Y	Y
C17		2		2		2		
C18	2	2	Y	2/1	Y	2	Y	Y
C19	0	0	Y	2	N	0	Y	N
C20a	0	0	Y	0	Y	1/0	Y	Y
C21	0	0/1	Y	0/1	Y	1/0	Y	Y
C22		0		0		1		
C23	0	0/1	Y	0	Y	0	Y	Y
C24	2	0/1	N	0	N	1/0	N	N
C25	0	2/1	N	2/1	N	1/0	Y	N
C26	2	2	Y	2	Y	1/0	N	N
C27	0	2/1	N	2	N	1/0	Y	N
C28	0	2	N	2	N	2	N	N
C29	0	0	Y	2/1	N	1/0	Y	N
C30a		2/1		2/1		1		

The blanks in the table are those children who didn't have ADI or ADOS tests.
In this table, columns four, six and eight look at whether or not the ADI diagnoses agree (Y) or disagree (N) with the MTDA, ADOS and Croft diagnosis. This is only a rough measure, however, because the ADI only measures whether a child has Autism or Asperger Syndrome, whereas the other three diagnostic tools look more broadly at whether or not a child is on the autistic spectrum. For this reason, in order to make a comparison with ADI scores, the Croft borderline scores (1) have been considered as 'no ASD' (0).
Appendix 5.28

Table 5.18: Music therapist's MTDA scores for the first and the second assessment sessions.

Child	MTDA 1 Amelia	MTDA 2 Amelia
C1		4
C2	6	6
C3	3	4
C4	6	5
C5	6	6.5
C6	1	1
C7	6	5.5
C8a	3	3

C9s	6	6
C10s	3	4
C11s	4	4.5
C12	7	7
C13	5	8
C14	7	6.5
C15a	1	2.5
C16	6	7
C17	4.5	7.5
C18	9	13
C19	2	2.5
C20a	4	4
C21	4.5	5.5
C22	5	3.5
C23	3	5
C24	7	5.5
C25	4	6.5
C26	10.5	7.5
C27	2.5	6
C28	10	10
C29	2	2.5
C30a	5.5	6.5

Appendix 5.29: Statistical tests of music therapist's MTDA scores for the first and the second assessment sessions.

Table Ap.5.19: Descriptive statistics of music therapist's MTDA scores for the first and the second assessment sessions

	Number of children	Mean	Std. Deviation
MTDA 1	29	4.95	2.43
MTDA 2	30	5.53	2.41

Table Ap.5.20: Wilcoxon Signed Ranks Test of music therapist's MTDA scores for the first and the second assessment sessions

Test Statistics (b)

	MTDA 1 – MTDA 2
Z	-2.056 (a)
Asymp. Sig. (2-tailed)	.040

a. Based on negative ranks
b. Wilcoxon Signed Ranks Test

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Appendix 5.30

Table Ap.5.21 Music therapist's (Amelia) scores for the second MTDA session and Research assistant's Emma) scores for the second MTDA session.

Child	MTDA 2 Amelia		MTDA 2 Emma		Agree-ment
	score	Diag	score	Diag	
C1	4	0	3	0	A
C2	6	1			
C3	4	0	10	2	D
C4	5	0	4.5	0	A
C5	6.5	1	7.5	1	A
C6	1	0	0.5	0	A
C7	5.5	1	6	1	A
C8a	3	0	3	0	A
C9s	6	1			
C10s	4	0			
C11s	4.5	0			
C12	7	1	4.5	0	D
C13	8	1	12.5	2	D
C14	6.5	1	6.5	1	A
C15a	2.5	0	2.5	0	A
C16	7	1	6	1	A
C17	7.5	1	3.5	0	D
C18	13	2	11	2	A
C19	2.5	0	3.5	0	A
C20a	4	0	3.5	0	A
C21	5.5	1	6	1	A

C22	3.5	0	1.5	0	A
C23	5	0	3	0	A
C24	5.5	1	5	0	D
C25	6.5	1	3.5	0	D
C26	7.5	1	7	1	A
C27	6	1	7.5	1	A
C28	10	2	10	2	A
C29	2.5	0	1	0	A
C30a	6.5	1	3	0	D

The blank spaces are when the research assistant was not able to score the MTDAs.
Diag: diagnostic category; 0: No ASD; 1: borderline; 2: ASD
A: Agree; D: Disagree
Appendix 5.31

Statistical Analyses of Music therapist's scores for the second MTDA session and Research assistant's scores for the second MTDA session.

Table Ap.5.22: Descriptive statistics of Music therapist's second MTDA scores and Research assistant's second MTDA scores

	Number of children	Mean	Std. Deviation
MTDA 2 M.T.	30	5.53	2.41
MTDA 2 R.A.	26	5.21	3.12

Table Ap.5.23: Wilcoxon Signed Ranks Test Statistical Analyses of Music therapist's scores for the second MTDA session and Research assistant's scores for the second MTDA session.

Test Statistics (b)

	MTDA 2 MT – MTDA 2 RA
Z	-1.435 (a)
Asymp.Sig. (2-tailed)	.151

(a) Based on positive ranks
(b) Wilcoxon Signed Ranks Test

Table Ap.5.24: Kappa Measure of agreement between Music Therapist's scores and Research assistant's scores

Symmetric Measures

	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Measure of Agreement Kappa	.558	.134	3.952	.000
N of Valid Cases	26			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Chapter 6
Appendix 6.1:

Collaborative aspects of this investigation
Prior to my applying for the Millennial Research Fellowship, Anglia Polytechnic University, along with other Universities, made a successful bid to the Music Therapy Research Charity for a research fellowship to be based at Anglia Polytechnic University. This bid involved collaboration between the Graduate School, the Music Department, the Music Therapy MA Training Course and the Dean of the School of Arts and Letters.

As soon as I was successful in obtaining the Fellowship from the Music Therapy Charity, the arrangements that were made meant that a number of people from different organisations would be working together.

Because I was a part-time lecturer at Anglia Polytechnic University, the funding came to the music department at the University and my principal supervisor was Helen Odell Miller, the course director for the MA in Music Therapy. My second supervisor was an experienced researcher and lecturer in the Sociology and Politics Department at Anglia Polytechnic University, who had been involved both in advising and supporting music therapy staff undertaking other smaller research projects in the past.

As my research was based on the clinical work I was carrying out at the Croft Children's Unit and at the Child Development Centre, I asked the Consultant Psychiatrist at the Croft to be my third supervisor. In addition, I asked Malcolm Adams who had previously been my supervisor for my MPhil research project and then advised me on my research with mothers and young children, whether he could be a research consultant. Malcolm Adams was the Co-director of the Clinical Psychology course at University of East Anglia. As a result, a total of three people from two different universities and from the Cambridgeshire and Peterborough Mental Health Partnership NHS Trust all collaborated in helping me with my research investigation.

There were a number of issues that had to be carefully sorted out, such as the fact that the research assistant was paid by the Health Authority who then billed Anglia Polytechnic

University, who had received the funding for the research project from the Music Therapy Charity. However, people and organisations were generally able to work together very well. Anglia Polytechnic University, for example, agreed to accept the Cambridgeshire and Huntingdon Health Authority Local Research Ethics Committee's approval of my two research investigations without expecting me to go through another University Ethical Investigation. At the Croft Children's Unit, the IT department agreed to adapt the laptop bought for me for the research project by Anglia Polytechnic University, so that I could use it for confidential patient data and it would be compatible with the hospital computer system.

It took me some time to learn when and how to consult my three research supervisors and my research consultant. However, each of the four people had their own area of expertise, which meant they could advise me on different aspects of the research without giving me conflicting advice.

The other collaborative aspect of this research project is the fact that I have worked very closely with my research assistant, Emma Carter. I outlined her exact roles at the end of section 1.4.2 in Chapter 1. What I hadn't realised was how much I would learn from having another music therapist present at so much of my clinical work over such a long period of time. At the end of music therapy sessions we would often discuss what had happened and from her position behind the camera she would sometimes see things that I had missed, or have a different perspective on events. Sometimes my reasons for choosing to do one thing rather than another in a session would become clear to me because of a question she asked or a comment she made. Because we were both very involved in this research project we were able not only to share the workload as outlined in section 1.4.2 in Chapter 1, but to encourage and support one another.

I also employed a music therapy research assistant in my previous research project with mothers and young children. This was another highly beneficial partnership where the research project was successfully completed and both the researcher and the research assistant learnt a tremendous amount from working together. I would, therefore, highly recommend that music therapists undertaking research projects consider employing music therapists as part-time research assistants.

Both of the outcome investigations in this project were collaborative. In the Child Development Centre I worked with the child and the parent together. In the Croft project the MTDA (which I administered) was compared with the ADOS (which was administered mainly by the consultant psychiatrist). Both tests were compared with the diagnosis reached by the Croft team. To carry out this investigation I clearly had to collaborate closely with the Croft staff team.

Appendix 6.2:

Courses, conferences and seminars attended during three years of research fellowship (2000 – 2003).

Papers or lectures given by Amelia Oldfield (A.O.), research fellow and Emma Carter (E.C.), research assistant, connected with this research project.

- June 2000: A.O took part in a Music Therapy Conference entitled: The Child, the Family and Music held at the Nordoff Robbins Centre in London. At this Conference A.O. gave a lecture entitled: 'Assessment and short term music therapy with mothers and babies'.

- October 2000: A.O participated in the Music Therapy Research Convivium at the Nordoff Robbins Centre in London. Paper presented by A.O.: 'Three music therapy research projects: an emerging methodology'.

- February 2001: A.O. and E.C. attended the BSMT and APMT Annual Conference entitled: 'Children need Music – Music Therapy and Children with Special Needs' at the Nordoff Robbins Centre in London.

- April 2001: A.O. and E.C. attended the European Music Therapy Congress in Naples, Italy. Sub-keynote presentation by A.O.: 'Music therapy with young children and their parents, developing communication through playful interactions specific to each child'.

- October 2001: A.O. gave a public lecture at the Mumford theatre at Anglia Polytechnic University that was part of a series of University lectures covering a range of musical topics. Title of the paper: 'Non-verbal communication in music – parallels between chamber music and music therapy'.

- October 2001: A.O. took part in a conference entitled Research and the Arts Therapies in Dundee, Scotland. Two lectures by A.O.: 'Getting started' and 'research presentation'.

- March 2002: A.O. was involved in the Postnatal Depression Project Study Day at Wallace House in Edinburgh. A.O. gave a presentation about 'Music therapy with mothers and babies'.

- July 2002: A.O. and E.C. took part in the 10th World Congress of Music Therapy in Oxford, England. Paper by A.O.: 'The use of orchestral instruments in music therapy'; paper by E.C.: 'Playing our part: the role of the music therapy group as an aid to diagnosis'.

- September 2002: A.O. and E.C. attended a two day course in London entitled: 'A Musical Approach to Developing Communication', given by the speech therapist Wendy Prevezer.

- November 2002: A.O. and E.C. took part in a research seminar for PhD students in Aalborg, Denmark. Together they summarised the current findings from this Phd thesis.

- March 2003: A.O. gave a lecture at an Anglia Polytechnic University research training day. The paper was entitled: 'Four music therapy research projects – towards a qualitative and quantitative methodology'.

- May 2003: A.O. participated in an International Qualitative Music Therapy Research Seminar, followed by the Nordic Music Therapy Conference, near Bergen, Norway. Paper presented by A.O. at the conference: 'Qualitative and quantitative data from music therapy sessions with pre-school children with autism and their parents'.

Appendix 6.3: Publications / training videos that have arisen directly or indirectly from this research project

OLDFIELD, A. 2000	Music Therapy as a Contribution to the Diagnosis made by the Staff Team in Child and Family Psychiatry – an Initial Description of a Methodology that is still Emerging through Clinical Practice, In: WIGRAM, T. (Editor), Assessment and Evaluation in the Arts Therapies, St Albans, UK, Harper House Publications, pages 93-101.

OLDFIELD, A. and BUNCE, L. 2001, a	Mummy can play too - Music Therapy with Mothers and Young Children, British Journal of Music Therapy, Volume 15, No. 1 pages 27-36.
OLDFIELD, A. 2001, b	Three Music Therapy Research Projects: an Emerging Methodology, In ROBARTS, J. (Editor), Music Therapy Research: Growing Perspectives in Theory and Practice, London, BSMT Publications, pages 34-41.
OLDFIELD, A. 2001, c	Music Therapy with Young Children and their Parents, Developing Communication through Playful Musical Interactions Specific to Each Child, In ALDRIDGE, D., DI FRANCO, G., RUUD, E. and WIGRAM, T. (Editors), Music Therapy in Europe, Rome, ISMEZ Publications, pages 73-88.
OLDFIELD, A. and NUDDS, J. 2002, a	Joshua and Barry, Music Therapy for a Partially Sighted Little Boy with Cerebral Palsy, Training video produced by Anglia Polytechnic University, available from the British Society for Music Therapy.
CARTER, C. and OLDFIELD, A. 2002	A Music Therapy Group to assist Clinical Diagnoses in Child and Family Psychiatry, In: DAVIES, A. and RICHARDS, E. (Editors) Group Work in Music Therapy, London, Jessica Kingsley Publishers.
OLDFIELD, A., BUNCE, L. and ADAMS, M. 2003	An Investigation into Short-term Music Therapy with Mothers and Young Children, British Journal of Music Therapy, Volume 17, No.1, pages 26-45.

Appendix 6.4: Music therapy research conference brochure

Appendix 6.5: Two research projects at the Croft Unit of Child and Family Psychiatry, connected with music therapy work.

In 2002 and 2003, Clare Sandford, psychology student at Cambridge University, undertook a small research project at the Croft Children's Unit comparing three children's responses to musical and verbal stimuli, (Sandford 2003). She investigated three children with autism who were receiving music therapy from Emma Carter, research assistant. She gathered data by using videotapes of the sessions which she analysed, parents' questionnaires and parents' interviews. The study demonstrated that the three children she investigated responded more frequently and more enthusiastically to music than to language. They also displayed greater enjoyment and appeared more relaxed when in a musical situation.

Since 2002, Christine Franke, psychotherapist, has been observing children with autistic spectrum disorder at the Croft in a variety of different settings including group and individual music therapy sessions. She is currently undertaking a PhD thesis where she is looking at what conditions and processes are necessary for a mind to represent feelings in symbols that inform ourselves of our state of mind. In particular, she is interested in what we can learn when the process appears to have gone wrong. At the Croft she has been investigating how children on the autistic spectrum disorder process, express and regulate emotions. She has become particularly interested in the fact that music therapy sessions indicate that 'hearing emotions' are more likely to generate feelings than 'seeing emotions'.